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E L E M E N T S

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E L E M E N T S  
O F T H E  
P R A C T I C E  
O F  
P H Y S I C,  
I N T W O P A R T S.

P A R T I. Containing,  
The N A T U R A L H I S T O R Y of the H U M A N B O D Y.

P A R T II.  
The H I S T O R Y and M E T H O D S of Treating F E V E R S,  
and I N T E R N A L I N F L A M M A T I O N S.

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By G E O. F O R D Y C E, M. D. F. R. S.  
Senior P h y s i c i a n to St. Thomas's Hospital, and Reader  
on the P r a c t i c e of P h y s i c k, in L o n d o n.

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The F O U R T H E D I T I O N,  
C O R R E C T E D A N D E N L A R G E D.

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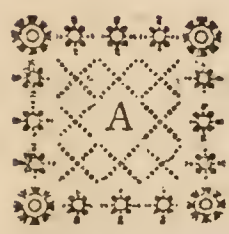
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T H E  
N A T U R A L H I S T O R Y  
O F T H E  
H N M A N B O D Y.

 D I S E A S E is such an alteration of the chemical properties of the fluids or solids, or of their organization, or of the action of the moving power; as produces an inability or difficulty of performing the functions of the whole, or any part of the system, or pain, or a præternatural evacuation.

The C H E M I C A L P R O P E R T I E S of the  
F L U I D S.

**T**HE fluids may be divided into

1<sup>st</sup>, The blood.

2<sup>dly</sup>, Those formed during digestion, before the food is converted into blood.

B

3<sup>dly</sup>,



*The* NATURAL HISTORY *of the*

3dly, The secreted fluids.

The blood consists of,

1st, The serum.

2dly, The coagulable lymph.

3dly, the red part.

4thly, The superfluous water.

5thly, Extraneous substances introduced.

The serum, coagulable lymph, and superfluous water, are diffused through one another, and the red part is mechanically mixed with them. Some of the extraneous substances are also mechanically mixed with them, and some diffused through them\*.

\* It is very necessary to understand the three modes of combination, to comprehend the mixture of the fluids in the vessels of animals ; they are,

1st, Chemical combination, when the particles of one substance attract the particles of another stronger than they attract one another, and the two substances are only capable of separation by the elective attraction, or destroying attraction by heat.

2dly, Diffusion, when the particles of one substance attract those of another, as strongly as they do one another,

## PROPERTIES of the SERUM.

**I**T is fluid in any degree of heat between 30 and 160 of Fahrenheit's thermometer.

In a lesser heat it freezes, in a greater it coagulates.

Coagulation is a separation of an animal or vegetable matter from the water in which it was dissolved ; and is at the same time a change of the properties of

ther, so that the substances are broke down into their smallest integrant parts, and are uniformly mixed, but may be separated by filtration in animals, or by eliquation or freezing.

*3dly*, Mechanical mixture, when the particles of the one body attract one another more strongly, than those of the other body ; in this case the substance, in the smallest quantity, is broke into small masses, which are surrounded by the particles of the other, and the two substances are separable by subsiding.

In the first, or chemical combination, the properties of the compound have no relation to the properties of the elements. In the two last, viz. diffusion and mixture, the properties of the elements remain perfect in the compound.

that matter, rendering it insoluble in water again by commixture alone.

The serum consists chemically of a coagulable matter, and water in which common sal ammoniac and phosphoric ammoniac, and generally common salt, and frequently selenites, and fixed ammoniac, are dissolved; but it is a question, whether the water chemically combined in the serum is also united with those neutral salts, or whether the serum, and the solution of these, are only diffused through one another.

It is probably in itself colourless, and inodorous; but it receives a yellowish or brownish hue from the putrescent mucilage\* of the blood, and acquires a smell from the essential oil.

\* An animal mucilage is a substance; solid and brittle when free from water, capable of being combined with water, so as to make a flexible solid or fluid; and always found so combined in animals: it is inflammable and empeurimatic oil, and volatile alkali may be obtained from it by heat.

If



If it contained no neutral salts, it would be insipid, and incapable of stimulating.

The superfluous water may be separated from it by filtration in the body, but that which is chemically combined with the other parts cannot.

All the water may be evaporated from it by a lesser heat than 140 degrees of Fahrenheit's thermometer, if it be exposed to the air. The other parts remain after this operation solid, and soluble again in water by commixture alone.

The separation or addition of superfluous water, does not affect its viscosity, so far as that is of any consequence in the circulation; but the separation of that water which is in chemical combination may render it more viscid.

The water in chemical combination is never separated, while the serum is contained in the blood-vessels; and of



consequence this part of the blood is always equally viscid, so far as its viscosity can affect the circulation or secretions.

It may be coagulated by acids, oils, alcohol, &c. but no substance can get into the blood-vessels in a sufficient degree of concentration to coagulate it, excepting by injection.

It may be coagulated by a juice, secreted in the stomach.

It has seldom, if ever, been found coagulated in the body.

The only perceptible difference which has appeared in the coagulable part of the serum, from any observation hitherto made public, is, that sometimes in coagulating, its parts adhere more or less firmly.

PROPERTIES of the COAGULABLE  
LYMPH.

**I**T is a compound of water and a coagulable matter.

As long as it continues in the course of circulation, it is fluid in any degree of heat between 30 and 120 degrees of Fahrenheit's thermometer.

When it is taken out of the blood-vessels, it coagulates; whether it be in motion or at rest, exposed to the air or not, or in the heat of the human body, or in any other degree of heat.

If it be retained in a blood-vessel, it continues fluid for more than three hours in any degree of heat between 30 and 120 of Fahrenheit's thermometer, and that whether it be in motion or at rest. The smaller the blood-vessel, the longer it continues fluid.

It has hardly ever been found coagulated in the blood-vessels of a living animal,

mal, unless they have been enlarged into aneurifms or varices.

It has generally been found coagulated in the large vessels of the human body on dissection, and sometimes separated from the other parts; but to all appearance these coagulations have always taken place after death.

This part of the blood coagulating, when taken out of the vessels, or after death, in the same chemical circumstances, in which it remained fluid, when the animal was alive, has given occasion to an opinion, that this fluidity, is one of those properties, superadded to the matter of the body by life.

When it is taken out of the blood-vessels, it may be prevented from coagulating, by saturating the whole blood with common sea-salt, and perhaps by some of the other neutral salts.

Although



Although the coagulable part of the serum and coagulable lymph have different properties, the coagulum formed from both is pretty nearly the same. The coagulum may be dissolved in water by boiling or putrefaction ; and may be united with concentrated acids, with caustic alkalis, and calcarious earth, and with some metallic salts, into a substance soluble in water ; but none of these can get into the system by absorption, either from the intestines, or any other part, so as to produce this effect.

Both the superfluous water and serum are capable of being separated from the coagulable lymph, by filtration in the body.

When the blood is received into a proper vessel, the coagulation of this part gives an appearance of solidity to the whole : but soon after the whole becomes thus apparently solid, part of the serum, of the superfluous water, and of the water which was combined with the coagulable lymph, oozes out  
from



from the whole mass, and brings along with it part of any extraneous fluid that may be contained in the blood-vessels; leaving behind what is commonly called the red globules, the coagulum of the coagulable lymph, and any solid particles that may have been in the blood. This is called the spontaneous separation.

When the arteries are acting strongly, whether the whole habit be strong or not, the coagulable lymph is more fluid, and longer in coagulating. Of consequence, it lets the red particles, which are the heaviest part of the blood, fall down towards the bottom, before it coagulates; and upon the spontaneous separation, the coagulum is divided into two parts; the upper, consisting of the coagulum of the coagulable lymph alone (which has in this case been called the buff); the under, consisting partly of this, and partly of the red particles.

Although

Although part of the coagulable lymph would separate from the red particles, it may be prevented by taking the blood from a small vessel, or from a small orifice, or by letting it run along the skin before it falls into the vessel into which it is received, or by receiving it into a vessel, whose surface is large in proportion to its contents; as in all these cases the coagulation is forwarded. On the other hand, if it stagnate in the blood-vessel for some time before it is taken out, there will be a separation, when none would otherwise have happened.

Whether the coagulable lymph separates in part from the red particles, or not, it coagulates sometimes into a firmer, sometimes into a looser mass, generally in proportion to the strength of the system.

All the substances which coagulate the serum, have the same effect on the coagulable lymph; but none can be applied to it in the blood vessels, excepting by  
in-

injection in a sufficient degree of concentration to coagulate it.

The coagulable lymph is probably in itself colourless, insipid, inodorous, and incapable of stimulating.

Whilst it remains in the blood-vessels, it is chemically combined with a certain proportion of water, from which it cannot be separated but by coagulation, neither will it combine with a larger proportion.

Water mechanically mixed with it, does not alter its viscosity, so far as that affects the circulation or secretions.

No other differences besides those already taken notice of, are observable in its properties.

The coagulable lymph and serum are both capable of putrefaction, and are converted by it into a mucilaginous matter not coagulable by heat.



If this mucilaginous matter should undergo a further putrefaction, it emits a fœtid vapour, and is converted into saline substances, calcarious earth, and water.

#### PROPERTIES of the RED PART.

UPON viewing this part of the blood with a deep magnifier in the solar microscope, as it circulates in the blood-vessels of a living animal, it appears to be divided into a number of small particles, which are apparently annular, and exceedingly flexible.

While the animal is respiring, and the blood circulating, it is of a scarlet colour in the arteries, and of a Modena red in the veins; but if the respiration be stopped, that blood which circulates afterwards through the lungs continues of a Modena red. If it be taken out of the veins, kept moist, and exposed to respirable air, it becomes of a scarlet colour; if it be taken out of the arteries,



teries, and covered from the air, or if it stagnate in them, its colour is changed to a Modena red. A light shade of Modena red is not scarlet, neither is a deep scarlet a Modena red\*. Various other substances alter the colour of this part.

It seems to have a sweetish taste, to be inodorous, and void of stimulus.

Its specific gravity is but a very little more than the serum or coagulable lymph.

It is readily soluble in water, but not in the serum.

It is not soluble in a saturated solution of neutral salts.

It is capable of undergoing the putrefactive fermentation, the first stage

\* Scarlet is a mixture of Modena red and yellow, so that the alteration of the colour of the red blood cannot arise from dilution.

of which breaks it down into smaller particles, and renders it of a dark colour. It is afterwards converted into a macilage, soluble in the serum.

#### The SUPERFLUOUS WATER.

**I**T is diffused through the serum and coagulable lymph.

It contains a part, perhaps the whole, of the salts.

These salts are chemically combined with a part of it only, and this solution is diffused through the remaining part.

The water diffused may be separated from the solution by filtration in the body.

The solid part of the blood, left after evaporation of the water by a heat less than that of boiling water, amounts  
to

to from one fourth to one fifth of the whole.

#### EXTRANEOUS SUBSTANCES.

A Great variety of extraneous substances, both fluid and solid, may be introduced into the blood-vessels by absorption; but none of them in such proportion as to produce any alteration in the blood, except by fermentation.

When any ferment is introduced into the blood-vessels, it acts upon a part of the blood only; the greatest part remaining to all experiment exactly the same as before.

It may be doubted, whether any ferment acts on any part of the blood in the blood-vessels, or whether ferments only act on extravasated fluids.



Of the PUTREFACTION of the  
BLOOD.

**F**ermentation is the conversion of one compound into another, by a new arrangement or manner of combination of its elements.

What is commonly called putrefaction consists of two fermentations, which we shall call by the names of the first and second stage.

All animal solids and fluids may be reduced by the first into a mucilaginous mass, soluble in water, and diffusible through any quantity of it.

The red part of the blood first breaks down into smaller particles, before it is formed into a perfect putrescent mucilage.

The first stage takes place without any effervescence.



The second stage converts this mucilage into earths, and salts, a foetid vapour, fixable air and water.

The first and second stage of putrefaction take place in a small part of the blood, or it is destroyed by some other operation ; for

After having coagulated the serum, if we squeeze out the water, and evaporate it, there is left a mucilaginous matter similar to that formed by putrefaction.

The salts formed in the blood-vessels, excepting phosphoric ammoniac, may be formed by the last stage of putrefaction ; and those formed by the last stage are found in the blood-vessels, excepting nitrous selenites, and nitrous ammoniac.

This mucilage, and these salts, are always carrying off by urine ; the present  
sent

sent blood is always diminishing, and the vessels require a fresh supply from the food.

The blood is always in the most powerful circumstances of putrefaction ; which are, a heat of 98 degrees of Fahrenheit's thermometer, fluidity, a moderate exposure to air, and motion : but it is prevented from putrifying by the action of the vessels ; nor can any ferment, or other circumstance, induce the fermentation, till this action is altered, except perhaps the introduction of chyle, intermixed with putrid matter.

In diseases, the first stage often takes place in part of the blood ; the second stage sometimes, although but seldom.

## OF DIGESTION.

**D**IGESTION is the conversion of the food into chyle, and afterwards into blood.

The food may consist of farinaceous or mucilaginous vegetable substances, or native vegetable acid, or sugar, or expressed oil, or animal solids, or animal fluids, containing a mucilaginous matter.

These substances may be digested, if they be taken singly, or if they be mixed together.

The blood formed does not differ sensibly in its properties, whether the one or the other of them be used singly, or several of them together; provided the organs of digestion be sufficiently powerful to convert them into blood.

If



If the food be solid, it is generally broke down by the teeth, or by some other apparatus.

But mashing it down with water is not sufficient to alter its chemical properties, and convert it into chyle and blood,

It is mixed in the stomach with the watery fluids we drink, and with the mucilaginous watery fluids secreted by the salivary and other glands.

It is sometimes dissolved in water before it is used : but it is often rendered solid by a previous preparation, or coagulated by a substance secreted in the stomach.

Simple solution in water does not convert it into chyle or blood.

If it be previously dissolved in water, it affords less nourishment than if exhibited solid.

It is necessary that it remain in the stomach for some time, in order to its digestion.

The only process it can go through in the organs of digestion, that is capable of altering its chemical properties, is fermentation.

Its fermentation is not attended with effervescence in a healthy stomach.

If vegetable food be used, an acid is produced. This acid is destroyed in the duodenum by the bile.

If animal food be used alone, no acid is produced.

The stronger the stomach, and the more perfect the digestion, the less acid is formed from vegetable food.

No stage of the putrefactive fermentation takes place, during the conversion of it into chyle and blood, if the digestion be perfect.

The fermentation which takes place is peculiar to the organs of digestion, and has never been produced by any artificial means yet attempted.

The fermentation, which takes place in the stomach, forwards the solution of solid food in the watery menstruum.

Solid foods dissolve sooner in the stomach than they can be dissolved in water in the same heat, by any means hitherto found out.

If the stomach does not act properly, solid food remains undissolved; vegetable, and mixtures of vegetable, and animal substances become acid; animal substances putrify; a quantity of air is separated; and the food is not digested and converted into chyle.



Only that part of the food which is digested affords nourishment ; the nourishment therefore is in proportion to the food and the digestion.

When food, either from its quantity or quality, cannot be digested, it is apt to occasion great disturbances in the system, while it is contained in the stomach and intestines.

The only sensible alterations produced in the blood by different foods, are in its quantity ; or in the proportion of superfluous water ; or that sometimes a long use of animal food, especially if it be preserved by salt, brings on a degree of putrefaction.

#### Of the C H Y L E.

**T**HE chyle is formed from the food in the intestines, and absorbed by the lacteals.

The

The whole fluid absorbed is not chyle, but a mixture of chyle, and the solution of those substances, which were simply dissolved in water without being digested.

*Quere,* Whether a simple solution of mucilaginous, animal, or vegetable substances, can be converted into blood, without being formed into chyle in the stomach and intestines ?

Chyle is fluid while in the lacteals ; when exposed to the air it coagulates ; it is rendered white from a mixture of expressed oil.

When coagulated, a fluid may be squeezed out, which probably contains a coagulable matter, and sugar.

The

## The SECRETED FLUIDS.

THEY either

Exist in the blood-vessels, being mechanically mixed with, or diffused thro' the other fluids, and require only a mechanical separation ;

Or they do not exist in the blood-vessels, their elements only being contained there ; but these elements are not combined, so as actually to form the secreted fluid. It is therefore requisite, that some chemical operation should take place in the secretory organ, by which the elements shall be combined, so as to form the matter secreted.

The chemical operation, by which they are formed, is fermentation.

The fluids separated mechanically are

The



The matter of the insensible perspiration.

The urine,  
The sweat,  
Perhaps the milk.

These are evacuated.

The fluids formed in the secretory organ, by a chemical operation, are

The mucus.  
The saliva.  
The pancreatic juice.  
The semen.  
The bile.  
The wax in the ear.  
The sebaceous matter.  
The coagulating matter of the stomach, &c.

These are retained and employed in the body.

The

The MATTER of the INSENSIBLE  
PERSPIRATION.

**I**T is separated from the surface of the lungs, and from the skin by evaporation.

The quantity evaporated depends upon the quantity of superfluous water in the blood-vessels, the heat of the air, the quantity of air applied, and the contraction or relaxation of the vessels, from whence the evaporation takes place.

When the body is in its natural state, that part of the insensible perspiration, which is capable of condensation, consists of water, with a very small proportion of a mucilaginous matter and essential oil, and sometimes perhaps volatile alkali, and fixable air,

There is no reason to suppose, that any matter flies off that cannot be condensed,

densed, from any experiment hitherto made ; but it is rather probable that there is not.

Should any other substance, capable of emitting vapour in the heat of the human body, get into the blood-vessels, or be formed on the surface of the skin, lungs, or in any of the passages of the air in breathing, it may be mixed with the insensible perspiration.

Some of these substances may be putrid vapour, variolous, morbillous, and other infectious matters, alcohol, and other extraneous volatile substances, &c.

The matters thrown off by insensible perspiration, may be evacuated by the other excretions.

The health is not in proportion to the quantity of insensible perspiration.

The



## The URINE.

**T**HE urine, in the common state of the body, is a transparent brownish fluid, which, upon cooling, has a mucilaginous matter separated, capable of being redissolved in heat, which we call the separating mucilage.

In health, this separating mucilage is generally in such quantity as to remain suspended in the urine after its separation, forming what has been called the cloud.

It is sometimes totally absent in health but much more frequently in diseases; sometimes it is in quantity sufficient to carry the cloud to the bottom, and form a mucous sediment; and sometimes it falls down in a flaky powder, and forms what has been called a lateritious sediment, which is commonly of a brick colour, and now and then white.

The

The lateritious sediment often takes place on the going off of acute diseases; but it also happens in health, and while diseases subsist in their full force, particularly when they affect the urinary passages, or parts near them.

Sometimes the separating mucilage is separated in a powder, remains suspended in the urine, and renders it turbid.

After the separating mucilage is separated, if the urine be filtrated from it, it is transparent, consisting of water which contains a mucilage, and salts.

1<sup>st</sup>, A mucilage, similar to that formed by the first stage of putrefaction.

This mucilage is of a brownish colour, and gives the greatest part of the colour to the urine.

Its

Its quantity varies considerably but ; the proportion of it in the urine is always small.

If the water be evaporated from it, it will redissolve, and it may be diffused through any quantity of water in any heat.

It is not coagulable.

*2dly*, The salts are common salt, common sal ammoniac, phosphoric ammoniac, vitriolic felenites, and muriatic felenites.

Common salt is contained in the urine, in consequence of its being used in the food, or drink ; and it is, in some degree, in proportion to the quantity used.

The other salts are contained in the urine, independent of any saline substance taken into the body, except perhaps the vitriolic felenites.

The



The quantity of selenitic salts is commonly very small; but sometimes the urine is saturated with vitriolic selenites, which separates, and chryсталizes, upon the urine's standing to cool.

The proportion of the salts varies considerably, but is always so small as to form a diluted solution.

The solution is generally sufficiently concentrated to stimulate a very irritable part, but not always.

The dilution depends on the quantity of superfluous water in the blood-vessels, and on the quantity evacuated by the kidneys: so that, when the secretion is large, the solution is generally diluted; when small, more concentrated.

Watery fluids may pass through the blood-vessels, and by the kidneys, hardly carrying off any thing with them, especially if large quantities be drank at  
D a time,

a time, and the external vessels be contracted.

Sometimes calcarious earth is found in the urine, suspended by mechanical mixture, or at least not combined with an acid.

Any extraneous substance, soluble in water, that may get into the blood-vessels, may be evacuated along with the urine; such as acids, alkalies, neutral and other saline substances; infusion of rhubarb, and other mucilaginous vegetable juices; bile, pus, and other fluids formed in the body.

If the kidneys are relaxed, or stimulated; chyle, serum, coagulable lymph, and even the red part of the blood may be thrown out.

The red part may also be broke down by putrefaction, and pass off by the kidneys of a very dark colour, disturbing  
ing

ing the transparency, and sometimes forming a sediment.

If the heart and arteries act more strongly, or frequently, than they do in their natural state, a quantity of expressed oil comes away with the urine, and forms a film on the surface, or a ring round the vessel into which it is received.

The urine always contains a portion of the essential oil of the urinary passages, and sometimes a portion of their mucus.



## The S W E A T.

**A**S far as we are capable of judging, from the small quantity that can be collected, it contains nearly the same substances as the urine ; only that, instead of the essential oil of the urinary passages, it is mixed with the sebaceous matter of the skin, which gives it a degree of whiteness, and a smell different from that of the urine.

## The M I L K.

**I**T is secreted naturally in the breasts of women, for the nourishment of their young, sometimes during pregnancy, and always after child-birth. There are said to have been instances of its being secreted at other times, and from other parts of the body.

It is a whitish fluid, which separates into two parts, upon being left at rest in  
a mo-

a moderate degree of heat: the upper part consists principally of expressed oil, with a mixture of the other part, and is whiter and more opaque, and is called the cream.

The under part consists of a solution of coagulable matter and sugar, in water; with a small mixture of expressed oil, and is called the skim-milk.

The expressed oil is fluid in the heat of the human body, but solid in the heat of the atmosphere.

It is only mechanically mixed with the other part.

It is tinged with, and receives a flavour from, the essential oil of the food and of the body.

It is found not only in different proportions in the milk of different women, [ but also in the milk of the same woman

at different times, and even in that which issues from the different excretory ducts of the glands of the same breast.

The coagulable matter only differs from the coagulable matter of the serum, in its coagulability, and its proportion to the water.

It is not coagulable by a less heat than that of boiling water, and by that only, if the water be evaporated from it.

It may be coagulated by acids, alcohol, several metallic and aluminous salts, and vegetable juices; but it requires, that they should be applied to it in a greater degree of concentration than the serum does, in order to its coagulation.

Heat assists the coagulating power of these substances.

It is readily coagulable by the coagulating juices of the stomach, and coagulates



lates in the stomach of a living animal, whether any acid be contained in it or not.

The sugar contained in the milk does not differ in its properties from that of the sugar-cane.

Its proportion is always small.

When a woman makes use of vegetable food, it seems to be in greater proportion than when she uses animal.

The milk of a bitch, using animal food alone, contains sugar.

If milk be kept for some time exposed to the air, and in the heat of the atmosphere, or of the human body, the sugar ferments, and is converted into vinegar, which coagulates the coagulable matter.

The same change may take place in the breast, if it stagnate there for some

D 4

time,

time, or if the woman be suddenly affected with any of the passions of the mind that are attended with anxiety.

If blood be taken from the arm after a full meal, the serum is often mixed with a substance which gives it a degree of whiteness and opacity.

The milk is secreted after a full meal in larger proportion, than after a woman has fasted for some time.

In the latter case, the proportion of the expressed oil, coagulable matter, and sugar, likewise diminishes, and the milk contains, besides these, the neutral salts of the blood, and acquires a bitterness from the sebaceous matter of the glands of the nipples.

In some women the milk always contains the salts of the blood, or the sebaceous matter of the nipples.

The

The sebaceous matter not only gives it a bitter taste, but also, sometimes, a yellowish colour, and a thicker appearance.

The milk may contain any substance which is thrown into the stomach, simply dissolved in water, and absorbed by the lacteals, without going through the digestive fermentations, and being converted into chyle.

#### The Mucus.

**I**T covers the surfaces of the membranes that are exposed to any extraneous matter, such as the skin and internal membrane of the mouth, nose, lungs, œsophagus, stomach, intestines, urinary passages, &c.

It is a fluid of an adhesive viscosity approaching to a solid, and of greater viscosity in one part of the body than in another.

It



It is a compound of a mucilage and water.

It is more or less viscid, according to the quantity of water with which it is combined.

It is of different degrees of viscosity in different parts of the body.

It will not combine with more water than what is already contained in it; neither can its viscosity be altered by digesting it with water, unless it begin to putrify; nor can the more viscid mucus of one part be converted into the less viscid of another.

If the water be evaporated from it by a gentle heat, the mucilage remains solid; if this be immersed in water, it will absorb that quantity which evaporated from it, but no more, and it will regain its former fluidity and viscosity.

It, for the most part, contains either no neutral salts, or so small a proportion  
as

as cannot easily be rendered sensible to experiment. It is colourless, insipid, inodorous, and incapable of stimulating.

It combines with concentrated vitriolic, nitrous, and muriatic acids, with concentrated solutions of some metallic salts, and also with concentrated or diluted solutions of caustic alkalies and caustic calcarious earth, forming compounds soluble in, and diffusible through, water.

Acids and some metallic salts dissolved in water and concentrated, but not to that degree as to dissolve it, alcohol and aluminous salts coagulate it. It is also coagulable by the heat of boiling water, but not by a less degree of heat.

The mucus defends the membranes from being so much stimulated by any application as they would be, if they were not covered with it.

If

If the secretion be suddenly increased, the matter secreted is often a thin watery fluid, containing the salts of the blood, and in consequence of them capable of stimulating ; and the membranes are not defended from external applications.

If a greater secretion should continue than what naturally takes place, the mucus retains the salts, but often acquires a visciditv, and becomes incapable of being diffused through water ; its colour also often grows white, greenish, or yellow ; and now and then it acquires a smell.

The



## The SALIVA.

IT is secreted by several glands in the mouth; and the principal part of it is thrown down into the stomach, to answer some purpose in the digestion of the food.

It is a fluid of an adhesive viscosity, with difficulty diffusible through water.

It consists of water, a mucilage similar to that of the mucus, and the salts of the blood, but not in so large a proportion as they are contained in the serum.

It contains a larger proportion of water than the mucus.

In its other properties it is similar to the mucus, in as far as they have been investigated.

The

## The PANCREATIC JUICE.

**I**T appears to be similar to the saliva, except that it is less viscid, and contains a larger proportion of the salts of the blood.

The saliva and pancreatic juice are probably watery menstrua for the solution of the food in the stomach and intestines, their viscosity preventing them from being absorbed before they produce that effect.

They have been said to act as ferments during the digestion ; but as the fermentations of the stomach have never been made to take place out of it, we cannot judge of this by any experiment hitherto communicated to the public.

## The BILE.

THE blood from which the bile is formed has probably gone through one circulation, without being exposed to the air in the lungs, or mixed with the fluids brought by the lymphatics from the different parts of the body.

The blood, from which the bile is formed, passes through the vessels of the abdominal viscera, before it arrives at the liver ; but it does not take up any substance from them, or, at least, not in such a quantity, as to be sensible to any experiment yet made public ; but, on the contrary, it appears perfectly similar in all sensible qualities to the blood returning by the veins from the other parts of the body.

There is no appearance of bile in the vena portarum of a living animal.

When



When bile in the jaundice is contained in the blood-vessels, it is secreted by all the secretory organs, and it is evidently contained in all the secretions.

The bile is formed from the blood in the secretory vessels of the liver.

It runs along the hepatic ducts into the ductus communis choledochus, and from thence partly into the duodenum, and partly into the gall-bladder.

It continues for some time in the gall-bladder, and becomes more perfect in its properties there; from thence it returns into the ductus communis choledochus, and passes into the duodenum.

The bile is a fluid of an oleaginous viscosity, consisting of a solution of a solid matter in water.

If the water be not evaporated from it, no alteration is produced on it by  
any

any heat between 32 and 112 degrees of Fahrenheit's thermometer.

The bile is diffufible through any proportion of water.

If the water be evaporated from the folid part by a heat, not exceeding 112 degrees of Fahrenheit's thermometer, it is foluble in, and diffufible through any quantity of water.

The folid matter of the bile melts if it be heated, and is decomposed if the heat be increafed.

If it is diftilled by itfelf, it yields a larger proportion of empyreumatic oil, than any of the other fluids, except the expreffed oil, and perhaps the red part of the blood.

It is of a yellow colour, and a fweetifh bitter tafte.

When it is not combined with more water than it generally is in the gall-  
E bladder,

bladder, it does not putrify more readily than the blood ; but if it be diluted with water, or watery fluids, it putrifies more readily.

Acids, and some of their compounds, decompose it, and precipitate from it a resinous matter.

The acidity of the acid is lost by its combination with the other part ; but if more acid be employed than what is necessary for the decomposition, the acidity of the superfluous quantity remains.

The matter precipitated has the peculiar smell of the animal.

It is solid in the heat of the atmosphere, melts in a moderate degree of heat, and burns very readily.

It is not soluble in water.

It is partly soluble in alcohol.

If



If the passage of the bile into the duodenum be stopt, acidities are apt to take place in the intestinal canal, the peristaltic motion does not go on properly, the fæces lose their peculiar colour and smell, and often acquire a more putrid fœtor, and the digestion is hurt, but not entirely prevented.

The properties of the other secreted fluids have not been sufficiently investigated by experiments, for us to be able to give any satisfactory account of them.

The CHEMICAL PROPERTIES of the  
ANIMAL SOLIDS.

**T**HEY are a compound of a mucilage and water.

They are naturally flexible; but, if the water be evaporated from them by a gentle heat, they become friable.

The water, chemically combined, cannot be separated from them by expression.

Exposed to about a red heat, they are decomposed; and if they be distilled by themselves, volatile alkali, empyreumatic oil, water, and calcareous earth, are formed.

When free from essential oil, blood, and the salts of the fluids, they are colourless, insipid, and inodorous.

They

They differ in their flexibility and elasticity.

Fibres and membranes are readily flexible, not capable of being broken by bending, and having a less degree of elasticity.

Cartilage is less flexible, capable in general of being broken by bending, and more elastic.

Cartilage often supplies the place of bone in young animals.

Heat, dilute acids, neutral salts, alcohol, metallic, and aluminous salts, astringent juices of vegetables, and several other substances, coagulate them, *i. e.* separate part of the water chemically combined, and of consequence contract them, diminish their flexibility, and harden them. Substances coagulating the animal solids, are called astringents.



If they be exposed to a freezing cold, the water freezes ; and, upon thawing, their texture is found to be altered.

Concentrated vitriolic, nitrous, and muriatic acids, caustic alkalies, even in a diluted solution, quick lime, and several of the metallic salts, combine with them into a substance diffusible through, or soluble in water ; and destroy their texture at the same time.

They are capable of putrefaction in the same manner as the animal fluids.

## The GENERAL STRUCTURE of the BODY.

### The BLOOD-VESSELS.

**T**HERE are cavities and tubes in the body, viz. the heart and blood-vessels, in which the red part of the blood, the coagulable lymph, and part of the serum and superfluous water, are usually contained.

They consist of the heart, arteries, capillaries, and veins.

The heart consists essentially of two cavities, there being two hearts, properly speaking, joined together in the human body, serving for two circulations of the blood; one through every part of the body, and one through the lungs.

The left side of the heart serves for the general circulation, and consists of

two cavities, the auricle and the ventricle.

The auricle is a cavity, which opens into the pulmonary veins at one end, and into the ventricle at the other. There is a valve placed at the opening into the ventricle, which prevents any fluid from passing from the ventricle into the auricle.

The auricle is in part covered with muscular fibres.

The ventricle is a cavity surrounded with muscular fibres, having one opening into the auricle, and another into a pipe, called the aorta or great artery.

At the opening into the aorta, there are valves, which prevent any fluid from passing from the aorta into the ventricle.

The



The aorta is a tube which begins at the heart, and dividing into a great number of branches, goes to every part of the body.

It does not divide at once, but branches out as it passes along.

When it has arrived at any part, and divided into very small branches, these open into one another, so as to have a free communication every way; from these arise a smaller set of tubes, which also communicate in the same manner; and from them again arise a larger set, which have likewise a free communication.

The first set have been called capillary, or anastomosing arteries; the second have not got a name; the third have been called capillary veins; but I term all of them capillary vessels.

From

From the third set arise tubes, which terminate in the heart, joining together as they go on towards it, and forming principally two large tubes, which open into the right auricle.

These are called veins.

The veins which are subject to frequent compression, from the action of the muscles, have valves which open towards the heart.

Each artery, capillary, and vein, is nearly cylindrical, but somewhat irregular in its diameter.

No muscular fibres appear on the arteries, capillaries, or veins in the human body.

These vessels are all of them elastic, and capable of being distended, so as to contain a larger quantity of fluid than what is necessary to render them cylindrical.

Their

Their elasticity is not sufficient to overcome the weight of their sides, and keep them cylindrical, if they are not filled with a fluid, excepting in that part of the aorta nearest the heart.

When an animal is dead, and no chemical or mechanical change has taken place in the vessels, the elasticity is the same as when the animal was alive.

When an animal is dead, and the vessels act by their elasticity alone, they are incapable of contracting to half the size they are of at their utmost distention, supposing them to continue cylindrical.

When an animal is alive, the blood-vessels are always cylindrical, excepting when they are compressed by a considerable external force.

They are always full of blood.

When



When an animal is alive, the veins, capillaries, and small arteries, are sometimes contracted to less than half the size they are of at other times, which cannot happen from their elasticity; therefore the veins, capillaries, and small arteries, in a living animal, have a contractile power, independent of their elasticity, by which they adapt themselves to the blood, and continue cylindrical.

This power is similar to the muscular power.

When the vessels contain more blood, they become longer, or their diameter is enlarged, or both; and *e contrario*, when they contain less blood, they become shorter, or their diameter diminishes, or both.

The contractile power of the vessels is capable of diminishing either their length or diameter.

When

When an animal dies, the arteries and veins lose their cylindrical form, and are flattened, and the capillaries contain less blood, so that the blood sufficient to fill the vessels when the animal was alive, is not capable of filling them after he is dead ; therefore

The arteries, veins, and capillaries of a living animal, are commonly contracted to a greater degree than they can be by their elasticity.

The elasticity is commonly endeavouring to distend them, but is always overpowered by the contractile power depending on life, which adapts the size of the vessels to the quantity of blood contained in them.

If the vessels are emptied to such a degree, that they cannot adapt themselves to the blood, and continue cylindrical, the animal dies.

The

The most essential effort of the living power, is, to adapt the vessels to the blood.

The COURSE of the general CIRCULATION of the BLOOD.

THE blood passes from the left auricle of the heart into the left ventricle, from the left ventricle into the aorta, and from thence, by the smaller arteries to the capillaries, in every part of the body; from these it returns by the veins to the right auricle of the heart. The blood, for the most part, moves in one uniform direction in each artery, viz. from the heart towards the capillaries: it also moves in one uniform direction in each vein, viz. from the capillaries towards the heart; but although it moves in general from the arteries through the capillaries into the veins, yet its direction in any one capillary may be, and often is, altered and reversed.

Both



Both the general velocity with which the blood moves through the whole system, and the proportional velocity of its motion in particular vessels, are constantly varying.

### The POWERS producing the CIRCULATION of the BLOOD.

THE force with which the blood moves in the veins, and the muscular contraction of the auricle, which takes place during the relaxation of the ventricle, propels the blood into the ventricle.

When a certain quantity of blood is propelled into the ventricle, its muscular fibres contract, being probably stimulated thereto by the blood.

This contraction of the muscular fibres of the left ventricle diminishes or obliterates it, and propels the whole, or part of the blood contained in it, into the aorta ; the valve placed at the opening

ing of the auricle into the ventricle, preventing its return into the auricle.

When the ventricle has emptied itself into the aorta, it relaxes and receives a fresh quantity of blood from the auricle ; the blood being prevented from returning from the aorta by the valves placed at its opening into the heart.

The action of the heart tends to produce an equal and uniform circulation in every part of the body.

*The CIRCULATION doth not depend on the ACTION of the HEART alone.*

The circulation is not equal and uniform through the whole body, but the same quantity of blood flowing from the heart, a greater proportion of it sometimes circulates through one part, sometimes through another.

If the heart be the sole power propelling the blood forward, the circulation  
can

can only be increased in any one part by an increase in the size of the vessels, or a removal of some obstruction to the circulation there, or a diminution of the size of the vessels, or obstruction to the circulation in the rest of the body; and *e contrario*, the circulation can only be diminished in one part by a diminution of the size of the vessels, or obstruction to the circulation there, or an increase of the size of the vessels, or a removal of some obstruction to the circulation in the other parts of the body: but it will appear, from what follows, that without any of these things happening, the circulation in a part may be diminished or increased, and therefore, that the heart is not the sole propelling power.

The principal causes producing an alteration of the size of the vessels, or an obstruction to the circulation, are,

1<sup>st</sup>, An increase or diminution in the disposition to contraction in the capillary vessels, or in the external pressure.



2dly, The meeting of the streams of blood in the anastomosing vessels.

3dly, The attraction of the blood to the sides of the vessels.

The disposition to contraction in the capillaries of a particular part, or the external pressure, may be increased, so as actually to produce a diminution of the size of the vessels of that part, (notwithstanding the action of the heart,) and by consequence a diminution of the circulation of the blood in that part.

As the obstruction arising from the meeting of the streams of blood in the anastomosing vessels depends on, and increases with, the velocity with which it moves, it tends to render the circulation in a part equal, by preventing an increase or diminution of it.

As the blood is thoroughly mixed in the left ventricle of the heart, and is distributed from thence to the different parts,

parts, no alteration in its attraction to the sides of the vessels from viscosity, can produce an increase or diminution of the circulation in a particular part, unless we suppose it to become more viscid, in its passage through the arteries of that part, which is too quick to allow of such alteration.

It has been supposed, that a viscosity in the fluids, or an increase of the size of their particles, often happened, and produced an obstruction to the circulation ; but this opinion has not been proved, or rendered probable, by any experiment hitherto made public : on the contrary, the red globules appear to be always nearly of the same size, except when they are broken down by putrefaction : the serum and coagulable lymph seldom or never appear more viscid than when in their common state ; and, if they were, their viscosity would affect the system equally.

The disposition to contraction in the capillary vessels, or the external pressure,

may be so much diminished, as that the action of the heart, continuing the same, the size of the vessels of a part may be increased, so as actually to occasion a greater circulation of blood in that part.

If the heart be the sole cause of the circulation, the only material alteration that could take place in the proportion of the circulation in the different parts, must depend on an increase or diminution of the disposition to contraction in the vessels, or on an alteration in the external pressure.

But the circulation may be increased in a particular part, the motion of the heart continuing the same, by causes which do not diminish the disposition to contraction of the vessels of that part, nor increase the disposition to contraction in the vessels in the other parts of the body, nor produce any effect on the external pressure.

There-



Therefore the heart is not the sole power which propels the fluids through the part in which the circulation is thus increased.

The causes capable of increasing the circulation in a part, are generally such as tend to excite muscular motion, and are called stimuli.

Some part of the body brought into action by these stimuli, is capable of increasing the circulation independent of the action of the heart.

This force must reside in the arteries or capillaries.

The arteries are endowed with a muscular motion, by which they may increase the circulation in a particular part, or assist the heart in the general circulation of the blood.

The arteries, at each contraction of the heart are distended; at each relaxation they contract.

This alternate contraction and dilatation might depend on their elasticity.

If their contractions and dilatations depended on their elasticity, their size at their utmost contraction in the living body should be equal to that produced by a fluid injected into them, with a force capable of overcoming the resistance the blood meets with in the capillary vessels, which, in the human body, is probably equal to eight feet perpendicular height of water.

But their size, even at their utmost state of dilatation, is less than that produced by a fluid injected into them, with a force equal to one foot perpendicular height of water, when the animal is dead.

Therefore their contractions and dilatations do not depend on their elasticity.

Or

Or the argument may be taken in this manner ; the vessels, when of the largest size in the living body, are less than they are in the dead body ; but as the elasticity remains perfect in the dead body, they could never be contracted by it in the living.

If the arteries contracted and dilated by their elasticity, no additional force could be applied from their contraction and dilatation ; since the heart would lose more force, in distending the arteries, than they would re-apply to the blood in contracting.

If the arteries, upon being distended by the blood thrown into them by the heart, are excited to a muscular contraction, and when they have performed this contraction relax, and, like the ventricle of the heart, receive the blood easily into them, and when they are again distended, are excited to a second contraction, they may apply an addi-



tional force to that of the heart, so as to promote the circulation through the whole body.

If such contractions and dilatations be greater in any particular part, they will promote the circulation in that part; in as much as, when they are relaxed to a greater degree, they will suffer the blood to pass through them more readily into the capillaries; and, when they contract, they will empty themselves more thoroughly into the capillaries.

The arteries have a muscular contraction and dilatation, similar to that of the ventricles of the heart, by which they apply an additional power to that of the heart, so as to promote the general circulation through the whole body, and often to increase the proportional circulation in a particular part.

As

As the capillaries do not contract or dilate alternately, and as the direction of the blood in any one of them is quite undetermined, this additional force cannot depend on their action.

The motion of the blood is regulated by the action of the heart and arteries, and the contraction of the capillary vessels; and these are measured by the pulse.

The

## The PULSE.

Indicates	by	It is called
1 <sup>st</sup> , <b>T</b> HE strength of the contraction of the heart,	Strength, Weakness,	Strong. Weak.
2 <sup>dly</sup> , The quantity of blood thrown out at each contraction,	Fulness, Smallness,	Full. Small.
3 <sup>dly</sup> , The number of contractions,	Frequency, Slowness,	Frequent. Slow.
4 <sup>thly</sup> , The regularity of its action as to strength, quantity or frequency,	Regularity, Irregularity, Intermission,	Regular. Irregular. Intermittent,
5 <sup>thly</sup> , The strength of the action of the arte- ries,	Hardness, Softness, Redoubling, Trembling,	Hard. Soft. Redoubling. Trembling.
6 <sup>thly</sup> , The irritability of the vessels,	Quickness, Regularity, Slowness,	Quick. Regular. Slow.
7 <sup>thly</sup> , The medium diameter of the arteries,	Dilatation, Contraction,	Great. Small.
8 <sup>thly</sup> , The quantity of blood in the vessels,	Oppression, Smallness,	Oppressed. Empty.
9 <sup>thly</sup> The contraction of the capillaries,	Obstruction, Freedom,	Obstructed. Free.

The



## The STRUCTURE of the LUNGS.

THERE is a set of vessels in the lungs, which contain air, and another which contain blood.

*The* AIR VESSELS.

The air vessels consist of a pipe, called the trachea; one end of which opens into the throat, and communicates with the atmosphere by the nostrils and mouth; the other divides into branches which go to every part of the lungs, and whose ends open into small cavities or cells.

The air in the lungs is generally in motion; for either that which is at present contained in the cells, is passing through the trachea into the atmosphere, or a fresh parcel is passing from the external atmosphere, through the trachea, into the cells.

The

The whole of this compound motion is called respiration: when the air is passing in, it is called inspiration; when it is thrown out, expiration.

When the thorax is enlarged by the action of one set of its muscles, the pressure of the external atmosphere forces the air into the lungs; the other set of muscles which contract the thorax when put in action, force the air out of the lungs into the atmosphere. But the pressure of the atmosphere on the surface of the body counterbalancing its pressure on the surface of the lungs, neither the muscles of inspiration, nor those of expiration, are assisted or counteracted by it.

If the air continues at rest in the lungs for many minutes, or if a man continue to respire the same air, or if he breathes air that hath served for the inflammation of fuel, or pure fixable air, or any other vapour excepting respirable air, he dies.

Some

Some vapours kill immediately if taken into the lungs, independent of their being unfit for respiration.

*The* BLOOD VESSELS.

The blood-vessels of the lungs consist of two sets, viz.

1<sup>st</sup>, The Pulmonary.

2<sup>dly</sup>, The Bronchial.

*The* PULMONARY VESSELS.

The right side of the heart is similar to the left, excepting that both the auricle and the ventricle have fewer muscular fibres, and that the auricle receives blood from the venæ cavæ, and the ventricle throws it into the pulmonary artery.

The pulmonary artery begins at the right ventricle of the heart, and goes from thence to every part of the lungs,  
in



in the same manner that the aorta goes to every part of the body.

When the pulmonary artery hath divided into very small branches, these do not open into one another, and form anastomosing vessels like the small branches of the aorta ; but they join again, and form veins, which, uniting together, go to the left auricle of the heart commonly in four trunks.

*The* CIRCULATION *of the* BLOOD *through*  
*the* PULMONARY VESSELS.

The blood passes from the right auricle into the right ventricle, from the right ventricle into the pulmonary artery, from the pulmonary artery into the pulmonary veins, and from the pulmonary veins into the left auricle.

*The POWERS propelling the BLOOD through  
the LUNGS.*

The right auricle contracting, propels part of the blood contained in it into the right ventricle, and is assisted by the force with which the blood moves in the veins.

The muscular fibres of the right ventricle being stimulated to contract when it is full, propel part or the whole of the blood contained in it into the pulmonary artery, the blood being prevented from returning into the auricle by the valve placed at the opening of the auricle into the ventricle.

After the ventricle has contracted, it relaxes and receives the blood from the auricle, it being prevented from returning from the pulmonary artery by the valves placed at the opening of the pulmonary artery into the ventricle.

The

The blood is thrown by the right ventricle through the pulmonary artery and veins into the left auricle.

Perhaps the pulmonary artery hath a muscular power, fimilar to the muscular power of the other arteries, by which it promotes the circulation of the blood through the lungs.

The blood meets with the same obstructions in its passage through the lungs, that it does in its passage through the other parts of the body, excepting that there being no anastomosing vessels, there is no obstruction from the streams of the blood meeting in them, and opposing each others motion.

The blood meets with some additional obstructions in its passage through the pulmonary vessels, besides those it meets with in the other parts of the body, viz.



1<sup>st</sup>, The motion of the lungs in respiration, as there are no valves in the vessels, tends to retard the circulation, although the reverse hath been asserted.

2<sup>dly</sup>, If a sufficient quantity of respirable air be not received into, and thrown out of the lungs, the motion of the blood in the pulmonary vessels is considerably retarded.

#### *The* BRONCHIAL VESSELS.

An artery arises from the aorta, and spreads itself through the lungs, terminating in anastomosing capillary vessels, which open into veins, in the same manner as the other branches of the aorta in other parts of the body.

The blood circulates in these vessels in the same manner as in the other vessels, arising from the aorta in other parts of the body.

The EXTRAVASATION and ABSORPTION  
of the LYMPH.

**P**ART of the superfluous water and serum is continually passing through the sides of the vessels, particularly the capillaries, into the cellular membrane, and all the cavities of the body, so as to keep their surfaces moist.

The fluids commonly extravasated have been called the lymph.

It has been supposed that they passed through tubes appended to the sides of the blood-vessels; but such vessels have never been demonstrated, nor is there any reason for supposing that they exist, excepting in the glands.

It is uncertain, whether the lymph passes through the accidental pores in the sides of the vessels, or by cylindrical organised holes; but it is most probable that  
it

it passes through organised holes, as the secretion is regular and constant.

The pores or vessels it passes through, are called exhalants.

It is absorbed by the lymphatics.

A lymphatic is a tube nearly cylindrical, divided by valves, so as to have the resemblance of joints.

They arise from the cellular membrane, and cavities, and the greatest part of them go to the thoracic duct.

The valves allow the lymph to pass from the cavities to the thoracic duct, but prevent its passing from the thoracic duct to the cavities.

The lymphatics, in passing from the cavities to the thoracic duct, go through the lymphatic glands.

The structure and use of these glands are not as yet ascertained.



The thoracic duct is a tube, which begins near the diaphragm, and commonly terminates in the left subclavian vein.

At its opening into the left subclavian vein, there is a valve which allows the lymph to pass from it into the vein, but prevents the running of the blood from the vein into the thoracic duct.

*the termination  
of the lymphatics in  
the thoracic vein,  
is a very ex-  
posed point.*

(a) Some of the lymphatics terminate in veins. These are similar in structure to those which terminate in the thoracic duct.

*The POWERS producing the EXTRA-  
SATION and ABSORPTION of the  
LYMPH.*

The contractile power of the blood-vessels squeezes the lymph into the cellular membrane and cavities.

The quantity thrown out is in proportion to the force of the circulation,  
the

the fluidity of the substances contained in the blood-vessels, or the quantity of the more fluid substances, and the degree of contraction of the capillaries and exhalants.

The joint of a lymphatic opening into a cavity, endeavours to fill itself from that cavity by its action as a capillary tube, the valves preventing the return of the lymph from the other part of the lymphatic. In like manner, a lymphatic may fill itself entirely from the cavity in which it terminates, but its action as a capillary tube will not tend, in the smallest degree, to propel the lymph into the veins.

It is most probable, that the joint of the lymphatic, next to the cavity, having absorbed a sufficient quantity of lymph to fill it, is stimulated to contract and propel the fluid into the next joint, and so on to the thoracic duct, or vein in which it terminates; and having emptied itself, and being relaxed, it fills it-



self again from the cavity, and so continues to act: for there is apparently no other power in the body capable of producing a regular flow of the lymph through the lymphatics into the blood-vessels.

For in a living animal, where the veins are contracting, and pressing upon the blood, if one end of a capillary tube terminate in a vein, and the other in a cavity; and if there be no action in that tube, excepting that which arises from its being a capillary one, or from the motion of the blood in the vein; if there be any motion in that tube after it is full, it will always be from the vein into the cavity, and never from the cavity into the vein, let the tube be of any size or shape whatever.

Further; the alternate pressure of the lymphatics arising from the alternate contractions and relaxations of the blood-vessels, or muscles, is not sufficiently powerful, universal, or equal, to produce



duce a regular flow of the lymph thro' the lymphatics into the blood-vessels.

Neither does the cellular membrane and cavities force the lymph into the lymphatics, and through them into the veins.

The extravasation of fluids from the blood-vessels into the cellular membrane and cavities, and their reabsorption, generally take place in the above manner.

Sometimes the coagulable lymph is thrown out by the exhalants.

When the coagulable lymph is thrown out, it most commonly coagulates.

If it coagulate, it cannot be taken up by the lymphatics, till it be redissolved.

In many cases it redissolves, and is absorbed much sooner than it can be rendered soluble in water, by putrefac-

tion when out of the body. At other times it continues in the cavity for many years.

The red part of the blood is also sometimes thrown out by the exhalants. In this case, its particles are broke down probably by the first stage of putrefaction, and it is afterwards reabforbed.

The same things may happen, if the red particles and coagulable lymph are extravasated in consequence of the rupture of a blood-vessel.

In particular parts, as in the corpora cavernosa penis, the extravasation and absorption is probably performed in a different manner, and by different vessels.

All absorbent vessels must have a power of propelling the fluids into the blood-vessels, sufficient to overcome the force of their contraction, by which they endeavour to propel the blood out of any opening.

The

The PROPERTIES depending on the  
LIFE.

**I**Nanimate matter is endowed with properties which are peculiar to, and distinguish its different species from one another, and these are called chemical.

Figure, motion, and other accidental circumstances, may give to any species of matter indiscriminately other properties, and these are called mechanical.

Animated matter of the same species, may have new or different chemical properties, or lose some of those it had when inanimate in consequence of life, and which are immediately altered when deprived of it. In animate bodies, there are also powers of action, and laws of motion, different from those mechanical ones found in inanimate matter; and there are also other properties, which have no resemblance of chemical or mechanical.

All these we call the properties depending on life.

The



### THE HEAT of the HUMAN BODY.

**T**HE bodies of quadrupeds \* have a disposition to maintain the same degree of heat nearly.

The heat of quadrupeds of the same species is generally the same, especially in mankind.

The common heat of the human body in health, is 98 degrees of Fahrenheit's thermometer.

The heat is the same throughout the whole body, excepting that a cold substance applied to the skin diminishes its heat: and the heat of the blood, flowing from an opened vein in a limb that is exposed to a cold atmosphere, is reduced two or three degrees.

Otherwise the heat continues the same, whether that of the atmosphere, or

\* In natural history the human species is included in the class of quadrupeds.

other furrounding bodies, be greater or less than ninety-eight degrees, unless when it produces a disease, the consequence of which is an increase or diminution of the heat of the body.

The body is capable of resisting different degrees of external heat or cold, according to the habit it has acquired. There are instances of its bearing 20 degrees below 0 of Fahrenheit's thermometer, with very moderate cloathing, and 115 above, without alteration.

The heat may be increased or diminished, by alterations in the body itself, especially in diseases.

The heat has seldom been observed to be less than ninety-four, or more than a hundred and ten degrees of Fahrenheit's thermometer.

An increased action of the living power in any part, or in the whole body, increases the heat; and *e contrario*, a diminution of the action of the living power,

power, diminishes the heat, either in the quantity produced in a given time, or the degree.

Fluids rubbing against solids, or very small particles of a solid immersed in a fluid rubbing against one another, or against a solid, produce no sensible heat; therefore neither the friction of the blood against the vessels, nor the friction of the red particles against one another, or against the vessels, produces, maintains, or regulates the heat of the body.

It has not been proved, by any experiment hitherto made public, that the fermentations producing, or destroying the fluids, generate heat; and if it were, these fermentations do not go on so regularly, universally, or constantly, as to produce, maintain, or regulate the heat of the body.

The heat is not at all in proportion to the evaporation, as a double quantity evaporated by the insensible perspiration, makes no alteration in the heat.

The



The power which produces, maintains, and regulates the heat of the human body in health, produces heat when the surrounding substances are heated to a less degree than 98 of Fahrenheit's thermometer, and cold, when they are heated to a greater degree.

### The NERVOUS SYSTEM.

**T**HE brain is a soft mass, internally of a white colour, externally of a greyish or ash colour.

It is furnished with blood-vessels in the same manner as the other parts, excepting that larger arteries anastomose, and the smaller veins enter more suddenly into a large trunk, whose sides are of a firmer texture.

In the more perfect or complicated animals it is contained in the cavity of the skull.

In

In man it is in a larger proportion to the whole body, than in any other quadruped, or any bird or fish hitherto known.

From the white part masses of fibres arise, which go to every part of the body. These are called nerves.

One large mass passes down through the cavity of the spine, and is called the spinal marrow.

A little of the cineritious part is contained in the middle of this, and also in the optic nerves.

The brain, spinal marrow, and nerves, are covered with membranes of a very firm texture.

The nerves proceed from the brain in trunks, which branch out as they pass to the different parts of the body.

Upon

Upon examining the trunks with a microscope, they appear to consist of very small fibres, which in the branching are only separated from one another.

In their passage the branches sometimes join again, forming roundish masses called ganglions, from whence they proceed to the different parts.

When they divide into very small branches, they have been supposed to become softer, and seem to go to every the smallest part.

#### The SENSIBILITY, MOBILITY, and IRRITABILITY of the BODY.

**T**HE sensibility is a property of the body, by which applications to it excite sensations in the mind.

The mobility is an original power of motion, by which certain parts of the  
body



body are capable of moving themselves without any external motion imprest.

The irritability is a property of the body, by which applications to particular parts excite a motion in the moveable parts, independent of the motion imprest.

### THE SENSIBILITY.

The sensibility depends on a part's being connected with the brain by the nerves ; for

If the nerves going to any part be cut through, the sensibility is lost.

If the nerves going to any part be moderately compressed, the sensibility is diminished.

If the nerves be compressed strongly, the sensibility is lost.

If

If the pressure be soon removed, the sensibility recurs.

If the pressure be continued for a long time before it is removed, the sensibility returns more slowly, or not at all.

Pressure on the brain may diminish the sensibility of the whole body.

If a small branch of a nerve be cut through, so as to take off the sensibility of a part of the skin, it may be restored in time.

The sensibility may be impaired, or lost, without any sensible pressure on the nerve, or alteration of its structure.

When there is no wound in the body, the sensations generally appear to be in the place where the application exciting them is made.

Y.H.

If

If an extremity be cut off, an application made to the stump, may produce sensations, which appear to be in the part amputated.

A sensation may be excited apparently in a part by an affection of the nerve going to it, the body being whole?

Every part of the body is capable of sensation in a sound or morbid state.

The bones and cartilages do not appear to be sensible in a sound state; whatever application be made to them; but in a morbid one they may become sensible.

All the other parts of the body appear to be sensible in a sound state; for the distention of a part considerably beyond its present disposition to contract, either by its muscular power or elasticity, is capable of exciting sensations in every other part of the body.

There



There are applications, which are capable of exciting sensations in one part, that produce no such effect in another.

Some of the sensible parts are only capable of sensation from distention in a sound state, such as the membranes.

One part may be sensible to an application which another is not, and the second part may be sensible to another application, which the first is not; as the effluvia of musk do not affect the eyes, although they affect the nostrils, and the rays of light affect the eyes, but not the nostrils.

Some parts of the body are only capable of the sensation of pain; others are capable of various sensations, of which pain is always one.

Some applications are capable of exciting pain only; others may excite various sensations.

Every sensation, excited in a very great degree, is painful, and several are also painful from being very weak.

Those parts of the body, which are capable of a variety of sensations, are generally called the organs of the senses. These are,

The skin, the mouth, the nostrils, the eyes, the ears; the stomach is capable of several sensations besides pain, but not of so great a variety as the organs of the senses.

Some other parts of the body are also capable of some sensations not painful.

All the sensible parts may have their sensibility increased or diminished.

*The MOBILITY and IRRITABILITY.*

Parts capable of original motion, are called the moving parts.

In many parts capable of original motion, there are red fibres called muscular fibres.

In some of the parts capable of original motion, no such fibres have hitherto been demonstrated.

All the parts of the body are not capable of original motion.

The muscles, blood-vessels, lymphatics, secretories of the glands, and skin, are capable of original motion.

The moving parts are capable of contracting beyond that degree of contraction which would arise from their elasticity.



All the actions of the body, and all the power which it exerts, depend upon the contraction of the moving parts.

When a muscular fibre, or any other moving part, continues in action for a considerable time, it does not, in general, exert one continued contraction, but a number of alternate contractions and relaxations. The relaxations, when the body is strong, or the whole strength is not exerted, are often hardly distinguishable; but when the habit is weak, or the whole force exerted, they become very apparent.

A contraction may however probably continue for a very long time, without any intermediate relaxation as a spasm.

When any motion takes place in consequence of a relaxation, it is from the elasticity or weight of the part, or from some external power.

The original motions are produced by volition, ideas of the mind, or certain external applications, called stimuli.

There must be the same intercourse; which is necessary for sensation, between the moving part, and the brain, by means of the nerves, to render volition capable of exciting a motion in it.

Many of the moveable parts are incapable of being put in motion by the will.

The will may acquire a power over a moving part, which it could not affect originally.

An idea of the mind may excite a motion independent of, and contrary to the will, provided the part be connected with the brain by the nerves.

The motions excited by the will are called voluntary motions ; those excited

by ideas, or stimuli, independent of, or contrary to, the will, are called involuntary and spontaneous.

All the parts of the human body, capable of voluntary motions, have red muscular fibres.

The will and ideas are both capable of producing contractions and relaxations in the moving parts.

If the communication between the brain and a moving irritable part be cut off, by cutting through the nerve, a motion may be still excited in it by a stimulus ; hence stimuli may excite motion without affecting the brain, and therefore all the motions excited by them, are not begun in the brain, and carried along the nerves to the moving part.

If a nerve be cut through, so as to leave a portion of it adhering to a moving part, a stimulus applied to the nerve, may excite a motion in the moving  
ing



ing part. Hence, the action of a nerve upon a part, may excite a motion in it; and the motions excited by the nerves, do not all arise in the brain.

If the communication between the brain and a moving part by the nerves continues, a stimulus applied to the brain, may excite a contraction of the moving part.

The motions produced by the application of stimuli to moving and irritable parts are apparently the same, whether the part be connected with the brain by the nerves, or not; excepting that the motions excited become more languid, after the moving part has been separated some time from the brain, and at last, the power of motion in it is entirely lost in quadrupeds.

The same things are true of the motions excited by the application of stimuli to the nerves going to a moving part.

Hence,

Hence, it is probable, that the motions excited by the application of stimuli to a moving and irritable part, or to the nerve going to a moving part, do not arise in the brain, but immediately in the part; the brain in this case only keeping up the life of the part, and rendering it capable of motion.

When a stimulus produces a contraction in a moving fibre, the force of that contraction is often far greater than the force with which the stimulus was applied. Therefore, when a stimulus excites a motion, it is not in consequence of a communication of the power employed in applying that stimulus: nay, the motion may be the very reverse of that which would have been produced by the exertion of that power.

When a stimulus, applied to a nerve, produces a contraction in a moving fibre, it is a question, whether the motion is excited in the nerve, and communicated

ted to the fibre, or produced immediately in the fibre, without any motions being excited in the nerve: for in this last there is often no apparent motion excited.

It has been conjectured by some, that the motion was communicated by a fluid flowing through the nerves as tubes; by others, that it was communicated by vibrations; and by others, that it arises from an elastic vapour surrounding the nerves; but none of these conjectures are founded on experiment, neither are any of them any ways capable of accounting for the appearances.

As the influence of a stimulus on a moving fibre is not occasioned by any mechanical communication of motion, may not a stimulus, applied to a nerve, exert its influence on a contractile fibre, without any mechanical communication, by any motion running along the nerve.

If the brain is not diseased, and two parts of the body communicate with it  
by



by the nerves, as for sensation, an application made to one of these parts, may excite a contraction or relaxation in the other, although none of the substance applied be carried from the one to the other, and although no sensation be excited by the stimulus. Hence a medicine, applied to one part of the body, may produce an effect upon another, although none of that medicine be carried to the part on which that effect is produced.

The effect of an application upon a part at a distance from that where it is made, may be the same which it would have produced if applied to that part, or it may be the reverse, or totally unconnected with it.

*Quer.* May not the application in this case influence the distant part, without any communication from a mechanical motion running along the nerves of the one part to the brain, and from the brain by the nerves to the other part?

An

An application to one part, may produce a motion in another, although it would have had no effect, if it had been made to the part itself.

A stimulus applied to a part incapable of original motion, may excite a motion in a moving part at a distance.

If the communication between the brain and any part of the body, by means of the nerves, be cut off, application made to that part will not affect the other parts, nor will application to the other parts produce motions in that; unless the nerves be cut off from a muscle, whose fibres have been accustomed to contract at one and the same time, such as the heart. In that case, if you stimulate one of these fibres, the whole are brought into immediate contraction; those not stimulated, contract, to all appearance, as soon as the one to which the stimulus is applied.

As

As in this case the communication between the fibres by the nerves is cut off, and as, after cutting through the nerves of a small part of the body, the sensation may in time be restored, is there not a communication of living influence, between the parts that are in contact, independent of the nerves

The parts on which stimuli are capable of acting, so as to produce motion, are called the irritable parts.

All the parts of the body are irritable in a sound state, excepting the bones, cartilages, and tendons.

All the parts of the body may become irritable in a morbid state.

Stimuli may produce motion in a distant part, when applied to a part incapable of original motion; or, in other words, all the irritable parts are not moving parts.



An application that produces relaxation, or diminishes contraction, is called a sedative.

A substance may act on one part as a stimulant, on another as a sedative.

A substance may act on one part as a stimulant or sedative, and have a less effect, or none at all, when applied to another, although otherwise equally irritable. Such stimuli are called specific.

There are some parts upon which stimuli in general produce greater effects than they do upon others.

A greater number of substances act also upon these parts.

The membranes, ligaments, and blood-vessels, excepting the heart, are incapable of being affected by any other stimulus but distention.

Some

Some of the applications capable of affecting the moving parts, tend to destroy the fibres by mechanical or chemical effects ; some of them have no particular mechanical or chemical power of action.

The irritability and mobility of a part may be increased, diminished, or entirely lost.

#### CUSTOM and HABIT, as affecting the B O D Y.

**C**USTOM is the frequent repetition of any application to the body, capable of affecting the sensible or irritable parts, or it is the repetition of any action or motion of the body.

Habit is the effect of such repetition.

An application, producing a sensation, may have its power increased or diminished by custom.

If

If the mind pays particular attention to any impression, its force and distinctness is increased. Hence arises the improvement of the eye, ear, &c. in distinguishing objects in painting, tones in music, &c.

If the impressions are very strong, so as to excite great attention, their force is increased.

If the impressions are not attended to, their force is diminished. Hence after living for some time near any thing producing a great noise, the noise is hardly heard.

The power of the will, in producing motion, may be increased by custom, and diminished by disuse.

The will, in frequently producing a motion, may not only have its power increased, but it is also capable of producing that motion with greater accuracy,



racy, and by frequent attempts may acquire a power over a moving part, upon which it has naturally little or no influence.

A motion may arise from a volition in consequence of custom, which was not naturally connected with it; as a man in turning in a loom does not will the motion of his hand, but the end of the chizel.

*Quer.* Can a man produce two distinct motions by his will at once; or, when two distinct motions are produced, does the will produce them successively? The impression arising from one volition remaining till the mind renews it, after having produced the other, in the same manner as the impression of a flame making a circular motion, remains on the eye, so as to give an idea of a complete circle.

The power of producing two distinct motions, apparently at the same time, is greatly increased by custom.

From

From the above circumstances the facility of execution acquired by custom arises.

The power of an idea in exciting motion, may be increased or diminished by custom.

An idea strongly imprest on the mind, is for the most part more powerful in exciting a motion, than one weakly imprest.

The power of an application in impressing an idea, may be increased or diminished by custom, as is above described, and of consequence the power of an idea in exciting motion.

Supposing the impression on the mind the same, if an idea has frequently produced a motion, its power is increased. On the contrary, if an idea has been often excited, and if the motion

depending upon it has by any means been prevented, its power is diminished or lost.

The action of an application producing, diminishing, or altering the mode of, contraction of a moving part, and which at the same time has no effect on the mind, may be increased or diminished by custom.

If it be often applied, so as always to produce its effect, its power, or the certainty of its action, is for the most part increased.

An application of an equal apparent force does not always produce the same effect. If the same quantity of ipecacuan be twice exhibited at the interval of several days, it may vomit at the first exhibition, and not at the second; or it may produce vomiting at the second exhibition, and not at the first.



In applying medicines, which do not act as simple stimuli, their particular effect cannot be increased by increasing the dose, they being converted into simple stimuli. Thus small doses of saccharum saturni produce costiveness, but a very large dose frequently purges. There is a maximum in the dose of all medicines, so that if they be exhibited in greater quantity their effects are lost instead of being increased.

An application frequently repeated, so as to produce its proper effect, often becomes more constant and uniform in its action, although it may become necessary that it should be applied in a greater degree.

If an evacuating medicine be repeatedly exhibited, it generally requires a larger dose at the second, and some of the subsequent exhibitions, to produce the same effect as the first; but if these produce the effect, the power of the medicine is afterwards encreased.

The more violent the effect of any application, the more is its power increased by repetition.

If an application be made in so small a degree, as not to produce any effect, or if its effects are by any means counteracted, its power is diminished or lost.

The repeated application of some medicines in any circumstance diminishes their powers.

All the natural powers of action in the body are increased by frequent exertion.

If two or more fibres have been accustomed to contract together, either by the action of the will, by an idea, or by stimuli; or if the contraction in one of them be produced by the will, while the other is brought into action at the same time by a stimulus, the producing of a contraction in the one by an application to it alone, will produce a contraction in the other. If they be fibres of the same muscle, and acted up-  
on

on by a stimulus, this will happen after the communication with the brain by the nerves is cut off.

If, after this habit is acquired, one of these fibres is made to contract frequently, while the other is prevented from contracting, the habit will be lost or destroyed.

If any motion, or state of the body, be repeated at a particular period of time, it will often return at that period, although no other cause be applied but the habit acquired.

A habit may be destroyed by counter-acting and preventing its effects.

Two habits may be so connected, that preventing the one from taking place, may prevent the effects of the other.

Custom has also a powerful influence on the mind.



## EXERCISE, REST, SLEEP.

WHEN a moving part is brought into action by the will, an idea or stimulus, that action sometimes ceases upon removing the cause, sometimes it continues after the cause is removed. This last frequently happens in the production of diseases.

When it is necessary for the continuation of an action, that its cause should be continually or repeatedly applied, the original power seems gradually to be exhausted, so that the motions for the most part become gradually weaker, and at last are not to be produced, as in the case of exercise.

There are some actions which are necessary for life, that are continued by the application of stimuli, and nevertheless do not apparently exhaust the original power; such as the action of the heart,  
the

the peristaltic motion of the intestines, &c.

If these actions are increased beyond their common pitch, or beyond what can be allowed by the present strength of the system, they also exhaust the original power.

A great exertion of the faculties of the mind also, exhausts its powers.

Rest restores both to the body and mind their powers of action.

In perfect sleep, both the body and mind are at rest, excepting in those particulars where an exertion is necessary to life. These exertions are in the alternate contractions of the heart and arteries, the motion of the muscles in respiration, the tone of the muscular fibres, blood-vessels, and other moving parts, the action of the lymphatics and excretory ducts, the peristaltic motion of the intestines, &c.

The

The common exertions of the body and mind, when a man is awake, exhaust to such a degree, as to require that rest which is found in sleep to allow the original power to recruit itself.

In sleep the mind is often brought into action, sometimes from affections of its own, sometimes from affections of the body. The body also exerts other powers besides those necessary for life. In these cases the original power is less recruited, and that in proportion to the exertion.

Although the original power may be so far exhausted as to require to be recruited by sleep, that state may nevertheless be prevented by any thing exciting great attention of the mind, by applications to the body producing uneasiness or pain, or by an increased action of any of its parts, or by any action or contraction which continues after its cause is removed.



The same causes may render sleep less perfect, although not sufficient to prevent it altogether.

Although rest is not compleat at the beginning of sleep, it has a tendency to become so during this state of the body. In particular, all actions and contractions remaining after their cause has been removed, are apt to go off.

During sleep the original power appears to be so much accumulated, as to give a disposition to action, both to the mind and body, from the slightest cause, and this state of the body goes off of course.

At the beginning of sleep, the rest is generally less perfect; it becomes gradually more so for a certain time afterwards. When the original power is recruited, the mind begins to be put in action, and at last the whole system, at which time sleep goes off.

A con-

A continued or strong action of one part of the body, may not only exhaust the original power in that part, but also in all the others.

A great exertion of the powers of the body, may exhaust the powers of the mind, and *è contrario*, a great exertion of the powers of the mind, may exhaust those of the body.

A frequent exertion of the original power in one part of the body, tends to strengthen that part, but to weaken the others.

An exertion of the original power, increases the loss of fluids, and renders a greater quantity of food necessary. Hence animals that require a considerable quantity of nourishment when awake, may sleep for several months without any being taken in.

A loss

A loss of fluids generally increases the powers of digestion, excepting when they are disordered by disease.

A moderate exertion of the powers of the body, in proportion to the present strength, powers of digestion, food, and sleep, tends to strengthen the whole body,

A violent or continued exertion of the original power, if it be not recruited by food and sleep, may weaken to that degree as to kill.

A repeated exertion of the powers of the mind, tends to strengthen its faculties ; but at the same time to weaken the original power in the body.

Unless the body be endowed with a certain degree of strength, the mind cannot exert itself powerfully.

Exercise of the powers of the body, tends to weaken the mind, except so far



far as is necessary to give the body the proper strength.

But a moderate exercise of the body and mind together, tends to strengthen the whole system, so that by custom the original power in the whole may be increased.

THE

THE  
DOCTRINE  
OF  
DISEASES.





## P R O E M I U M.

A DISEASE is an alteration of the chemical properties of the solids, or fluids ; or of the organization of the body ; or of the action of the moving power, producing an inability or difficulty of performing the functions of the whole, or any part of the system ; or pain ; or a preternatural evacuation.

All diseases are brought on by some external application to the body or mind ; and this is called the *occasional cause* of a disease.

An occasional cause may act,

1st, Immediately ; *i. e.* when it immediately brings on the disease without any previous alteration.

2dly, Intermediately ; *i. e.* when it occasions some other alteration in the system, of which the disease is the consequence.

## P R O E M I U M.

Certain states of the human frame render it more liable to particular diseases. The causes of these are called the *predisponent causes*.

The alteration produced is the disease, and is the proximate cause of the symptoms, or external appearances by which we judge of it.

A disease seldom remains in the same state, but either increases and kills, terminates in another distemper, or produces some action or motion in the body, by which it is cured. This is called the *natural cure*.

The danger may arise, 1st, From the disease itself: 2dly, From the natural cure: 3dly, From another distemper following the primary one: 4thly, From the weakness brought on during the progress of the disease.

A disease may be cured,

1st,

1st, By assisting the natural cure.

2dly, By imitating it.

3dly, By avoiding accidents during its progress.

4thly, By applying remedies which will effect a cure in a manner different from the natural one.





THE  
DOCTRINE  
OF  
FEVERS.





T H E

Symptoms, Distinctions, Prognostics,

A N D

INDICATIONS OF CURE,

W I T H

T H E R E M E D I E S

I N

F E V E R S.

**T**HE periods of fevers begin with the following symptoms.

(a) Languor, weariness, weakness, insensibility of the extremities. Blindness and insensibility in the other organs of sensation, cold and trembling, pain in the back.

Symptoms of the cold fit, or first stage.

(b) Horripilatio; the skin pale, dry and of a dusky colour; a dry, foul tongue, and thirst; transparent urine; costiveness; and suppression of other secretions;

tions ; paleness and dryness in ulcers ; a small obstructed pulse, some times intermitting ; pain in the limbs, joints, and forehead ; *delirium*.

(c) Anxiety ; oppression and swelling about the *præcordia* ; frequency of the pulse ; quick and laborious respiration, sometimes with a cough ; rigor, and horror ; thirst, flatulencies, loss of appetite, *nausea*, and vomiting,

According to the violence of these symptoms at any time of the disease, the fever is violent ; and when they are intirely carried off, it is cured.

These are produced by

Causes

1st, Certain passions of the mind suddenly excited, the principal of which are fear, grief, and anxiety.

2d, Cold.

3d, Putrid, infectious, and variolous, morbillous and other eruptive matter, acting upon the irritable parts.

4th,

4th, Retention of certain substances in the *primæ viæ*, as indigestible food in the stomach, *fæces* in the intestines.

5th, Changing of customs or climates, to which the body has been habituated; at least assisting the other causes.

6th, Unknown causes.

These causes, except variolous and morbillous, and sometimes other matter, produce fever immediately, without any previous alteration. And when matter does not produce fever immediately, it does not enter the blood vessels, but lodges in some part of the body for some time, and, as soon as it enters the blood vessels and touches the heart, the fever immediately comes on.

Any two of them acting together are more powerful in exciting the disease, than one singly.

They act more certainly on irritable habits.

When



When a fever is once produced, it is totally independent of its cause, and for the most part goes on in the same manner, whether it be removed or continued. Unless when the symptoms of the first stage destroy the patient, they are followed by

2d stage, of  
hot fit.

RIGOR, and HORROR; heat rising from the præcordia, and diffused from thence over the body irregularly, unequally, and flushing; a strong, full, obstructed pulse; or a very frequent, small one; pain in the head, and joints; *stupor* and *delirium*; universal soreness; redness arising in different parts irregularly; the urine high coloured, but perfectly transparent; sweating in the head and breast, or over the whole body; partial secretions.

The symptoms of the first stage are gradually relieved.

Crisis.

At last the pulse becomes free; all the secretory organs are relaxed; hence the skin grows soft, and moist, and returns to its natural colour, the tongue likewise

likewise is soft and moist, the belly is open, and the urine in greater quantity, if transparent when discharged, after a little time becoming turbid and opaque, and at last depositing a copious sediment: the secretions are often greatly increased; there arises a copious and universal sweat, or a purging, or great flow of urine.

The frequency of the pulse, and all the other symptoms of the first and second stage gradually subsiding, the patient recovers his health, but is considerably weakened.

Or there arises an inflammation or hæmorrhage in some part of the body, the symptoms of the first stage suddenly disappearing, or being greatly diminished.

During the whole period, the blood continues the same in all its sensible qualities, sometimes throwing up the coagulable lymph, and coagulating firmly,

firmly, sometimes having its natural appearance; and sometimes coagulating loosely.

F E V E R S are,

The EPHEMERA SIMPLEX, consisting of one period only.

Species.

RECURRENT, FEVERS consisting of more than one period, no single one lasting more than twenty-four hours, or till the following evening.

RECURRENT FEVERS are,

Varieties.

The INTERMITTENT, in which the symptoms of one period go off entirely before a second arises, or there are only left a slight pain in the back, a foul tongue, some contraction and paleness on part of the skin, with languor.

The REMITTENT, in which the patient is greatly relieved; but the pulse continues frequent, and several other symptoms are not carried off before the second period begins. The



The CONTINUED, in which one period begins before the former is considerably abated.

Fevers recur in consequence of

1st, Symptoms of the first stage continuing after the crisis.

2d, Fresh occasional causes.

3d, The natural evening paroxysm of fevers.

4th, A habit acquired.

5th, The action of types.

In intermittent fevers, the disease is Types. more apt to recur at the end of 48 hours from the beginning of the former period, than at any other interval: such are called *Tertians*: next to this it is more apt to recur at 24 hours, when they are called *Quotidians*; or at 72 hours, when they are called *Quartans*; but there are instances of their occurring at all other intervals.

QUOTIDIANS are frequently converted into TERTIANS, and TERTIANS into QUARTANS. The

Types.

The symptoms indicating strong action of the vessels, often happen in Quotidians; the symptoms of the first stage are violent in Tertians; and those indicating weakness, are frequently found in Quartans.

But symptoms of strength and weakness occur in all the types.

In fevers recurring at the end of 24 hours, when every second period is more violent, they are called *Double Tertians*; when every third, they are called *Triple Quartans*.

In Continued-Fevers the exacerbations happen commonly every day in the evening, and are equable at the beginning, but gradually increasing: and this commonly through the first week: in the middle every one is more violent: and this compleats often the second week: and at the end every third, when they likewise gradually decrease and go off in the third week for the most part, unless when they are irregular.

In



In continued fevers at the beginning, for most part, the vessels act strongly ; at the end weakly.

In all fevers, the more violent the attack at any particular period, the greater chance there is of the paroxysm's running through its stages, and producing a perfect crisis.

In continued fevers left to themselves, more violent exacerbations oftner happen on the fourth, fifth, seventh, ninth, eleventh, thirteenth, fourteenth, seventeenth, and twenty-first days, than on any others, and these therefore have been called critical days.

If the tertian type should begin on the sixth day, the critical days will be altered.

The danger is greatest on the critical days, the paroxysms also go through all their stages on these days, and a perfect freedom from the disorder is produced, (in which case for most part it does not recur ;)

Or



Or the disease without any remarkable crisis goes off by the exacerbations becoming gradually less and less, and being followed by imperfect critical symptoms.

**Prognostics.**

The danger arises from the violence of the symptoms of the first stage, and the *delirium* produced from thence ; or from too strong an action of the vessels, or irregularity in the disease ; from great weakness and irritability.

**Violent symptoms of the first stage.**

The first is indicated by the diseases being preceded by long continued languor, weariness, and weakness : its being attended by great prostration of strength ; symptoms of putrid blood appearing in its course as a black fur upon the tongue ; petechiæ, hæmorrhage, putrid secretions, as putrid fæces and fœtid breath, frothy or thick and black urine, the skin's being rough, dry, and unequal ; ulcers becoming perfectly dry ; the pulse being much obstructed ; the tongue and mouth's being dry, the tongue covered with a dry, rough fur, and the thirst unextinguishable ; the urine's being pale,

pale, perfectly transparent, and in small quantities; the nails, fingers, and feet, remaining cold and pale; the nose sharp, temples and eyes hollow; skin of the forehead contracted; ears cold; and face universally pale, or of a dusky colour. When the breast is particularly affected, it is shown by the pulse being very frequent irregular or intermittent, the breathings being short, quick, and laborious, the patient moving his nostrils; the *præcordia* tense, swelled, and hard; the anxiety and restlessness great. When the mind is much, or particularly affected, there is delirium, either with contraction, or fullness of the vessels of the brain; the first is shown by the eyes being sunk, and stupid, without redness or flushing of the face; the second by the eyes being bloodshot, the face flushed, or the cheeks red; both begin with watchfulness, or restless and unrefreshing sleep, the patient waking somewhat delirious; the imagination afterwards continues hurried; the patient picking the hairs off the bed-cloaths, and hunting

L flies;



flies ; the thirst going suddenly off ; violent delirium, or a total insensibility, or convulsions appearing.

Symptoms of strong action of the vessels.

The second is indicated by a hard, full, strong pulse ; a great redness ; a quick respiration ; a dry white tongue ; great pain in the head and joints ; sweating about the head and breast, or all over the body ; red swelled eyes ; *stupor*, *delirium* ; convulsions.

Symptoms of weakness, irregularity, & irritability.

The third is indicated by partial, or universal, or cold colliquative sweating purging ; tears ; great secretion of urine ; or any partial secretion, the others not taking place at the same time ; urine with a mucous cloud or sediment ; any part of the system being affected with symptoms of the first stage, in a greater proportion than the other parts ; the types varying the paroxysms or exacerbation sometimes diminishing for two or three periods, afterwards becoming more severe. A small, quick, trembling pulse ; the patient lying seemingly stupid without much uneasiness ; or on his back



back with the legs and arms extended, slipping out at the foot of the bed; fainting when in an erect posture, or upon any evacuation; *delirium subsultus tendinum*; the *fæces* and urine evacuated without knowledge of the patient; the pulse lost in the arm.

When the symptoms of the first stage come on with great violence, the disease is oftner an *Ephamera simplex* or *Intermittent*, than a Continued-Fever.

Symptoms  
shewing the  
mode of con-  
tinuance.

When the symptoms (*a*) of the first stage attack the patient more violently in proportion to (*b*) (*c*), the disease is apter to be continued, and *è contrario*.

When the tertian type is evident on the first days of a Continued, it is generally changed into an Intermittent.

The more perfect the crisis, the less danger of a relapse, and *é contrario*.

Continued fevers, whose types are changed by evacuations, are less apt to

be cured by a crisis, and have more imperfect crises than those running through their natural periods.

Fevers, which in the beginning are neither attended with strong symptoms of the first stage, nor those indicating great strength or weakness, generally continue long.

Varieties of continued fevers.

Fevers that are continued, and have the symptoms of the first stage violent, are, the *Plague*, *Malignant Fevers*.

Continued fevers, in which the symptoms of the first stage are at the beginning slight, if attended with symptoms of strong action of the vessels, are *Inflammatory Fevers*; if otherwise, irregular low *Nervous Fevers*.

### *Indications of CURE in FEVERS..*

Indications of cure.

I. INDICATION. All applications increasing the disease, rendering the hot  
fit

fit irregular, or disturbing the natural periods, are to be avoided.

Indications of  
Cure.

(A) The food is to be easy of solution and fermentation; not flatulent; nor producing an adhesive solution; agreeable to the stomach; and not in too great quantity.

Proper Substances for Food are,

(a) Decoction of rice, barley, oats, &c.

(b) Barley, oats, rice, &c. shelled, and afterwards boiled; or fermented, baked into bread, and afterwards toasted.

(c) Milk broths made of pullets, lean mutton, and beef.

(d) Pullets about nine months old, roasted, or boiled.

(e) Whittings, flounders, soals, dace, roach; these fishes however are seldom to be used.



Indications of  
Cure.

(B) The *Primæ Viæ* are to be cleared of any offending matter, by gentle emetics and laxatives, or glysters, according to the strength of the patient.

(a) Proper laxatives are, sal glauberi verus, tartar vitriolatum, tartar solubile, pollychrestum rupellense, sulphur, radix rhei, manna, cassia, tartar, fructus tamarindorum.

(b) Laxatives used in glysters are, decoctum commune pro clysmate, sal commune, sal glauberi, oleum lini, saccharum rubrum, electarium lenitivum.

(C) External heat and cold are to be avoided, as are likewise sudden changes from the one to the other, and air unfit for respiration.

The patient is to be confined to his bed, where unnecessary exertion is avoided, and the heat is equable over the whole body. The bed-chamber is to be large, and heated when necessary by fuel burning in an open fire place ; or cooled  
by

by sprinkling the floor with infusions, or distilled waters of some of the aromatic herbs, such as thymus, rosmarinus, lavendula, rosarum flores; and the bed is not to be exposed to currents of air.

Indications of  
Cure.

(D) Sleep may be procured by

(a) Attention to an uniform murmuring noise.

(b) Antispasmodics and sedatives, as oleum dulce, oleum æthereum in spiritu vini soluta et aqua commixta.

(c) Opium, which is seldom useful, frequently prejudicial.

(E) Passions of the mind attended with anxiety are to be avoided.

II. INDICATION. Accidents arising from too strong action of the vessels or plethora are prevented;

(A) By bleeding, according to the strength of the patient, and violence of the symptoms of the first stage.

L 4

(B) By

Indications of  
Cure.

(B) By using such food as affords little nourishment. Vid. Ind. 1st. (A) (a)].

(C) By sedatives given internally, such as

Acidum vitriolicum, muriaticum, limonum, tamarindorum, berberis, mororum.

(D) By laxatives, so as to procure two or three stools.

Vid. [Ind. 1st. (B) (a)]

III. INDICATION. Care is to be taken not to waste the powers of the body unnecessarily by evacuations or otherwise through the course of the disease ; and the strength is to be supported, when the symptoms of weakness come on.

(A) Stimulants and antispasmodics are to be given according to the weakness, such as sack, madeira, mountain, port, claret.

(B) By



(B) By food of as great nourishment as can be digested without disordering the system through the whole disease.

It hath been the practice with this view, to give the spices, and other similar stimulants; but as they generally quicken the pulse, and greatly increase all the symptoms of irritability, I think they ought to be laid aside; blisters, upon the same account, are not useful for this purpose.

IV. INDICATION, Irritability arising towards the end, is to be taken off.

(A) By acids. Vid. [Ind. II. (C)]

(B) By cortex peruvianus, if there are remarkable remissions, or a general freedom in the secretory organs.

(C) By opium given so as to act constantly but gently.

(D) By exhibiting strengthening remedies in intermittents as cortex peruvianus thanamæli, preparationes ferri.

V. IN-

Indications of  
Cure.

V. INDICATION. The symptoms of the first stage are to be taken off, or diminished.

(A) By giving internally medicines to relax the small vessels throughout the system by their action on the stomach, such as nitrum commune, ammoniacum commune, all the other neutral salts, radix ipacacuanhæ, præparationes antimonii, aqua frigida.

By applying warm water in fomentation, especially to the legs and thighs.

(B) By external applications producing inflammation, such as cantharides, semina sinapi.

By applying leeches to the temples in case of delirium from fullness of the vessels of the brain.

The gentle stimulants, commonly called *Diaphoretics*, as contrayerva, &c. have been used internally by many practitioners for this purpose; but their action is extremely doubtful.

VI. IN-

VI. INDICATION. The disease is to be prevented from recurring.

Indications of  
Cure.

(A) By taking off symptoms of the first stage remaining after the crisis, and facilitating the re-production of the disease. Vid. [Ind. V, (A)]

(B) By counter-acting the cold fit, before, and at the time of the accession.

(a) Vid. [Ind. V. (A)]

(b) By the application of stimulants and antispasmodics ; (1) externally, as allium, sinapi, aromata ; (2) internally as the aromata, alkali volatile, opium, moschus, camphora.

(C) By medicines preventing any application from affecting the system, so powerfully as it would do naturally, (i. e. diminishing irritability) such as cortex peruvianus, vitriolum et muria ferri, vitriolum cupri alumen, cortex fraxini.

The



## The P L A G U E.

## Causes.

**I**T is always produced by putrid or infectious vapour applied to the body, sometimes acting as the sole cause, sometimes in conjunction with others; and more or less powerfully, according to the irritability.

## Distinctions.

Of all continued FEVERS this attacks the patient with the most severe symptoms of the first stage: these too increase in it the fastest at every exacerbation, and produce the symptoms of weakness the quickest, particularly those of putrid blood.

In cold climates the symptoms of strong action of the vessels sometimes appear at the beginning with great violence.

## Prognosis.

For most part the symptoms of the first stage arise to so great a height, as to kill the patient before the end of the first week.

The

The putrid vapour in the air, may perhaps be destroyed, by impregnating it with acids ; as, by burning great quantities of wood, or detaching great quantities of concentrated muriatic acid from sea salt by the vitriolic, and evaporating it.

General prevention.

Fear, grief and anxiety, indigestible and flatulent food, costiveness, cold, and the other causes of fever, are to be avoided as much as possible.

Particular prevention.

Medicines destroying the irritability of the body may be exhibited (as a glass of wine) when any one is unavoidably exposed to the infection in circumstances where it would act more powerfully. The bark may be used as a preservative, in the following, or a similar form.

(No. 1.) R Vin. Rubr. Lusit. ℥ ij  
           Cort. Peruv. } a. a ʒ ij  
           — Cinam. }

Digere

Digere per horas xlviii Calore 100  
Grad. Therm. Faren. et col. Capt.  
Coch. iiij ter indies.

## Cure.

The fever is to be put a stop to, if possible, by the most powerful means of taking off the symptoms of the first stage.

(No. 2.) R Pulv. Ipecac. Gr. vi ad  
xij.

Tart. Emet. Gr. i. Ft.  
Pulv. Emet.

Vel. Ft. cum Syr. Scilit. q.  
f. Bolus. Emet.

Vel. R Tinct. Ipecac. ʒss ad ʒj.  
Tart. Emet. gr. j. Ft.  
Haust. Emet.

Cap. Vesp. Hora ix Superbib. Infus.  
Cham. vel Card. Benedict. nequaquam  
tamen ultra modum urgeatur vomitus ;  
in lecto etiam detineatur æger.

After



After the operation of the emetic, Cure.  
the patient is to be laid in cotton or flannel, his head bound round, and when warm the following draught is to be given.

(No. 3.) R Aq. Menth vulg. vel Cin-  
nam. Ten. vel Alexit.  
simpl. — ʒjss

L. L. gtt x ad xxv. vel.

Syr. Diacod. ʒjss ad ʒvi.

Aq. Menth Spir. vel Nuc.

Mosch. vel.

Cinam. Spir. ʒij.

Syr. Moror. ʒij.

If a sweat can be raised by these means, it is to be kept up by relaxing medicines.

(No. 4.) R Tart. Emet. gr.  $\frac{1}{4}$  ad gr. j.

Sach. Alb. gr. x m. Ft.

Pulv. Capt. quartâ vel

sextâ quâque horâ cum

Hauft. sequent.

R Aq Menth. vulg. ʒiss.

Nuch. Mosch. ʒij. Syr.

Moror. ʒij m Ft. Hauft.

If

Cure.

If the vomiting should continue, it might perhaps be adviseable to add a few drops of laudanum to the draught.

The patient is to drink copiously of any warm watery fluid at the same time.

If by this means the fever should be carried off, the following medicine may be made use of to prevent a relapse.

No. 5.) R Pulv. Cort. Peruv. Subt.  
3fs. da 3j. Ft. Pulvis.

Vel. Cum Syr. Croc. q. f. Ft.  
Bolus.

Vel R Aq. Alexit. 3fs.  
Pulv. Cort. Peruv. 3fs.  
ad. 3j

Syr. e Court. aur. }  
Aq. Cort. aur. Spir. } a a 3ij.  
Ft. Haust.

Capt. secundâ quâque horâ.

If the symptoms indicating strong action of the vessels should be violent, it  
may

may be necessary to take away a little <sup>Cure.</sup> blood. No solid food is to be used.

From the descriptions given, and methods of cure applied by the different authors, who have treated of the Plague in the cold climates, the above seems to be the most promising means of saving patients, who would otherwise certainly be destroyed.

An inflammation of a lymphatic gland, sometimes arises at the beginning, and diminishes or entirely carries off the fever. This inflammation is never to be taken off, but always brought to suppuration.

Inflammations also arise which tend strongly to gangrene. Patients appear often to have been lost for want of necessary attendance.



The Violent FEVER ; otherwise called the Putrid, Malignant, Jail, Camp, Hospital, or Petechial FEVER.

Causes.

IT generally proceeds from the same causes that produce the plague, only not applied in so great a degree.

Distinctions  
and Prognos-  
tics.

This fever attacks the patient with violent symptoms of the first stage ; particularly with those marked (a). The cold often returns alternately with the heat, for the first 24 hours ; the symptoms indicating strong action of the vessels sometimes appear, but seldom to any great degree ; the fever increases greatly every evening, so that *delirium* often comes on about the beginning of the second week, and with the other symptoms of the first stage kills the patient : otherwise each exacerbation becomes less towards the end of the second week and afterwards ; the *delirium*, especially when it arises from relaxation of the vessels of the brain, is converted into a *stupor* ; the crisis happens from  
the

the beginning of the second to the end of the third week ; or the disease gradually leaves the patient with very imperfect critical symptoms. From the middle of the second week, and sometimes sooner, the symptoms indicating putrid blood, begin to appear ; especially if bleeding and stimulants have been used, and often arise to such a height as to prove fatal.

From the violence of the disease the patient is often so much weakened as to be cut off in the third week. Sometimes, although seldom, an inflammation arises at the beginning, alleviating, but seldom entirely terminating the disease.

When putrid or infectious vapour is applied, it sometimes produces at first, only some of the symptoms of the first stage, which continue several days, at last a strong attack comes on at once followed by a hot fit, and the fever proceeds as above.

The air is frequently to be changed in places where it is liable to putrify,

General Prevention.

and the putrid matter that has been generated, is to be destroyed by acids converted into vapour.

Particular  
prevention.

As in the PLAGUE.

If some few symptoms only arise from putrid or infectious vapour, they are readily carried off by the emetic (No. 2.) and draught (No. 3. ) or by (No. 4.) they ought never to be neglected, although ever so slight.

No blood is to be taken away, unless the symptoms indicating strong action of the vessels, which are enumerated page [146] be severe, or the patient be very plethoric, and even then, with caution ; and the bleeding hardly ever requires to be repeated.

We are to endeavour to lessen the fever at the beginning, by the emetic (No. 2.) and the stomach is to be settled by (No. 3.) but proper sweating is not to be attempted.

If



If the fever continues, in the evenings Cure.  
following that in which the emetic was  
given, until the fifth day,

(No. 6.) R Sach. alb. gr. xx.

Tart. Emet. gr. fs. ad  
gr. j. divid. in Pulv. ij.  
Capt. unum hora viij al-  
terum hora xj. Vespert.  
cum Haust. (No. 4).

Or it is better to exhibit the medicine  
in the following manner,

(No. 6.) R Tart. Emet. gr. xxxx. Solve  
bulliendo ex Aq. Pur.  
℥ij solutioni fere bullien-  
ti adde Vin. Alb. dulcis  
℥vj. sumat gtt. xxv, et  
supra, sextâ quâque horâ  
nausea non tamen ex-  
citanda.

At the beginning, through the whole  
periods, gentle sedatives may be used, as

(No. 7) R Aq. Menth. vel Cinnam.  
ten. vel Alex. ℥iss Succ.  
Limon. vel Mororum, vel  
M 3                      Acid.

Cure.

Acid. Vit. vel Mur. q. f.  
ad gratam acedin.

Syr. Violar. — ʒj.

Ft. Haust. quartâ quâque  
horâ fumend.

If the belly be not sufficiently open,  
to one of the draughts may be added,

(No. 8.) Add. Haust. Suprapræscrip.

Sal. Glauber. ver. ʒij ad ʒiij vel  
Tart.

Vit. ʒfs ad ʒj vel Tart. Solub:  
ʒi. ad ʒfs.

Small doses of neutral salts have been  
exhibited at this time of the disease,  
but for the most part without any sensi-  
ble advantage.

Delirium from fullness of the vessels  
of the brain is to be taken off by apply-  
ing leeches to the temples.

If the symptoms of the first stage  
should increase with great violence in  
the second week, particularly delirium,  
blisters

blisters are often applied to the head Cure.  
and back, with advantage; but blistering the patient from head to foot from this time to the end of the disease, exhausts his strength, quickens the pulse, produces petechiæ, renders the system extremely irritable, and sometimes produces *subfultus tendinum*, and convulsions.

If the head be more affected than the rest of the system, the blister should be applied to it; if the breast, it should be applied there.

Acids are continued, provided the patient be not much affected with flatulency.

The belly is to be kept open if necessary, by glysters, from this time to the end of the disease.

(No. 9.) R Decoc. commun. pro Clysm:

℥ viij ad ℥ xiv.

Elect. Lenitiv. ℥ vj ad ℥ jfs vel

Sal Glaub. ver. ℥ fs ad ℥ j.

O Lin. ℥ jfs.

M. 4

m Ft.



Cure.

m Ft. Enem. pro re nata vesp.  
injc.

The greater the weakness the less of  
the purgative is to be employed.

As the symptoms indicating weakness  
appear, the strength is to be supported.

Bibat *Æger Vin.* ʒfs ad ʒj bis ad  
Sexties Indies.

The simple stimulants are, I think, to  
be avoided, although it has been much the  
practice to employ them as well as cam-  
phor and other antispasmodics, and by  
men of such eminence that it requires  
more than my experience to reject them  
entirely.

If in the latter part of the disease with  
great weakness, there be considerable  
remission without stupor; or if there be  
general relaxation of the secretories,

(No. 11.) R Aq; Menth. Vulg. ʒjfs.

Pulv. Cort. Peruv. gr. xv.  
ad ʒfs.

Syr.

Syr. e Cort. Aur. ʒij. Cure.

Aq. Menth. Piper. ʒj m. F.  
Hauft.

Vel Loco Pulv. Cort. Peruv. decoct. fequent. ʒss ad ʒj.

(No. 12.) R Cort. Peruv. sublt. Pulv.  
ʒj. Aq. Font. ℥i.

Coquantur simul-per decem  
Minut. prim. vafe claufe.

Capt. iv<sup>ta</sup> vel vi<sup>ta</sup> quâque horâ.

If the fymptoms of weaknefs be confiderable, it will be improper to ufe (No. 6\*) or continue it to this time of the difeafe.

The food, at the beginning of the difeafe, is to be of thofe articles marked (*a*) (*b*); and when the fymptoms of weaknefs appear, thofe marked (*c*) may be added; and native vegetable acid, if the patient be not affected with much flatulency.

## The Inflammatory F E V E R

Causes.

**I**S produced in strong habits by all the causes of FEVER, frequently by cold, but seldom by putrid vapour.

Distinctions  
and Prognosis.

The symptoms of the first stage are slight, particularly those marked (a); but they are followed by a violent hot fit, in which all the symptoms indicating strength appear in a great degree, the whole fever being often entirely terminated by topical inflammation or hæmorrhage, leaving only general inflammation; or in a few periods the patient is destroyed by the strong action of the vessels immediately affecting the brain, or depriving him entirely of sleep, and in consequence of that, causing delirium, violent convulsions, and death. If none of these things happen, in the second week the strength diminishes, the fever goes off with a perfect crisis; or imperfect critical symptoms



toms appear after each exacerbation, these becoming gradually less.

The white crust covering the tongue in falling off, sometimes leaves little ex-ulcerations behind.

By avoiding the causes of fever.

Prevention.

The action of the arteries is to be di-  
minished, Cure.

Ft. V. S. ad ʒ viij vel ʒ xvj bis ter qua-  
terve repet. pro re nata.

(No. 13.) R Aq; Alexit. ʒjss.

Sal. nitr. ʒj ad ʒij, vel Sal.

Alk. V. Fix. Succ. Li-  
mon. fatur. ʒj. vel Spt.  
Minder ʒss.

Syrup. Limon. ʒij m Ft.

Hauft. quartâ vel sextâ  
quâque horâ fumend.

The belly is to be kept open by  
(No. 8.)

The

Cure.

The action of blisters, if there be no topical inflammation is extremely uncertain.

If when the fever is almost entirely gone off, the delirium from want of sleep continues, the system being greatly weakened, after all other means of procuring sleep have been tried and have failed, opiates may be used sometimes with advantage.

If any exulcerations arise in the mouth, in this, or any other fever, either with or without apthæ, they are cured by

(No. 14.) R T<sup>ra</sup> Rosar. ʒ viij.

Mel. Rosar. ʒj ad ʒij m Ft.

Gargarismus utatur sæpius.

Or, if they withstand this, by (No. 11.) if it be not contra-indicated by the symptoms of the fever.

The

The food in the inflammatory state is Cure.  
to be of the kinds marked (*a*); when  
the strength diminishes, those marked  
(*b*) may be used.

When the fever is entirely removed  
relapses are prevented by (No. 5.)

This fever, after the general inflam-  
mation is conquered, ends sometimes as  
the violent fever, and in this case is to  
be treated in the same manner.

The



## The Low Nervous F E V E R.

**I**N this FEVER the irritability of the body is very great ; in consequence of which, the periods throughout the whole disease are often irregular.

Persons pre-  
disposed to  
the disease.

It attacks people of phlegmatic temperaments ; or those weakened by using food not sufficiently nourishing for their exercise, by great evacuations, long continued use of stimuli ; persons living in an impure air, &c.

Causes.

It may be produced by all the causes of fever ; but it arises most commonly from affections of the mind, and from cold.

Distinctions  
and Prognosis

For most part at the first attack, and in some of the following exacerbations, the symptoms of the first stage are few, and those not violent, and they are followed by very slight hot fits : the pe-  
riods

riods however increase gradually ; but it is often the end of the first week before the disease is compleatly formed, or gives the patient so much uneasiness as to make him apply for relief. From this time it continues to increase considerably, and is attended with the symptoms of weakness, particularly those indicating great irritability, which often arise to such a height, as of themselves, or with the fever, to destroy the patient. It happens too that delirium from irritability takes place, the eyes are moist and quick in their motions, the patient is anxious and restless and without sleep, his replys to questions are quick, and with agitation, and this delirium is often fatal. The crises happen generally in the third week, or later ; or if there be no complete crisis, the exacerbations become irregular, sometimes increasing for two or three days, sometimes diminishing, sometimes coming on at various times in the day : in this case the disease is often drawn out to a great length.

Distinction  
and Prognosis

If

If the patient be very weak at the first attack, both the symptoms of weakness and fever are sensibly greater at the beginning, and the disease is much shortened.

The patient is to be strengthened, and the causes of fever are to be avoided.

Cure.

The fever at the beginning may often be removed, or so much lessened, as to be of little consequence; (*a*) by the emetic (No. 2.) and draught (No. 3;) or (*b*) by (No. 6;) or (*c*) even by (No. 4.) or (*d*) by the neutral salts with gentle diaphoretics, as

(No. 15.) R Aq; Menth. vulg. ʒjss  
 Alk. V. Fix. Suc: Limon.  
 satur ʒj.  
 Pulv. Contrayer. gr. xv.  
 ad ʒss.  
 Syr. Croc. }  
 Aq; Menth. Piper. } a.a ʒifs  
 m Ft. Haust. Capt. iv<sup>ta</sup>  
 quâque horâ.

Of these methods, (No. 2. and (No. 6\*))  
 are preferable. If



If the head should be much affected Cure.  
towards the beginning, a blister applied  
to it, or to the back, often diminishes  
the whole fever, and relieves this symp-  
tom.

If by any of these means the fever is  
carried off, it should be prevented from  
recurring by (No. 5.)

A stool, if necessary may be procured  
by gentle laxatives at the beginning.

(No. 16.) R Aq; Menth. Vulg. ʒifs  
Rad. Rhei Pulv: gr: x ad  
xviij  
T<sup>ræ</sup> Sen ——— } a a ʒj  
Syr: e Cort. Aurant: }  
m Ft. Haust. Capt. pro re nata.

Afterwards by glysters (No. 9.)

When the weakness begins to appear  
in any great degree, the patient is to be  
supported in the same manner as in the  
violent fever : but simple stimulants are  
to be given with still greater caution, on  
account of the irritability.

Cure.

If at this time any considerable remission should appear, the bark as in (No. 11.) may be given every three or four hours, during such remission, with advantage; the same medicine may be employed if the symptoms of irritability be great, but the secretory organs tolerably free.

The food is to be of those articles marked (a) (b) (c) and even (d) if the stomach will bear it, and ought likewise to be acidulated.

N. B. *It is to be remarked, that these fevers are all of the same species, and are only varied by the violence of the first stage, and by the strength or weakness of the patient, which as they differ under different circumstances in a great many ways, so they produce an almost inconceivable variety in the disease.*

The

Intermittent and Remittent  
F E V E R S.

**T**HEY may happen from all the causes Causes.  
of Fever, but generally from cold ;  
especially produced by moisture in the  
air from stagnating water, or thick woods:

They are frequently found in warm Distinction  
and Prognosis.  
climates where they often have rather  
remissions than perfect intermissions.  
The periods for most part, even from  
the beginning, are violent in all their  
stages : they are sometimes perfectly dis-  
tinct at the first, but more commonly  
run more or less into one another, and  
are attended with the symptoms indica-  
ting strong action of the vessels, especially  
in the spring, and in cold climates :  
these gradually decrease, the periods  
become more distinct, and the fever  
often changes its type. In many cases  
the intermissions become perfect, and  
continue so for some time ; till the  
symptoms of weakness appearing, the  
fits re-double, anticipate, grow irre-  
gular, and leave the patient, or run into  
one another and destroy him.



Distinction  
and Prognosis.

When a patient is cut off in an intermittent fever, it is often in the first stage of the paroxysm.

The weakness occasioned by this disease is great, and often not to be recovered without difficulty. It renders the patient subject to dropfies, and other diseases, which are frequently fatal.

If an *Intermittent* attacks a weak patient, the intermissions for most part are not perfect even from the first, and they become gradually less so, till at length the patient sinks.

If one fit of fever attacks the patient so that a period is completed in a few hours, and no symptom is left, it seldom recurs, and never without a fresh cause.

When a spasmodic contraction of the *Ductus Choledochus* occasions the throwing a quantity of bile into the blood-vessels, from whence it is secreted by the different glands, the intermissions are sometimes rendered less perfect.

After

After an intermittent is cured, either naturally or artificially, it is apt to recur from the lightest cause for many months, but less so when it has gone through its natural progress.

The causes of fever, particularly cold, are to be guarded against. (Vid. the Catarrh.) Prevention.

In habits where there is no great weakness, a perfect intermission is to be procured, Cure.

(1) By cleansing the *primæ viæ*; for which purpose the emetic (No. 2.) may be given in the intermission; a gentle purgative may likewise be used.

(No. 17.) R Infus. Sen. ʒjfs

P. Rad. Rh. ʒj ad ʒfs

Syr. Ros.

Træ Sen.

} a a ʒij m.

Cure.

Capt. Intermiff. Temp. ita ut purgatio ex toto ceffaverit ante Paroxyfmi Acceffionem.

(2) If the fymptoms of ftrength are great, bleeding will be ufeful for the fame purpofe.

(3) By relaxants.

(No. 18.) R Aq; Menth. vulg. ʒjfs  
 Tart. Vit. ʒfs ad ʒij vel  
 Sal. Amm. ʒij ad ʒj vel  
 Tart. Emet. gr.  $\frac{1}{4}$  ad gr.  $\frac{1}{3}$   
 Aq; Menth. Piper. } a a ʒ ij m  
 Syr. Moror. }  
 Capt. quintâ vel fextâ quâque horâ

The emetic as above, will likewife act in the fame manner.

It fometimes happens that a perfect intermiffion being procured by thefe means, the difeafe leaves the patient.



If notwithstanding such intermission <sup>Cure.</sup> the fever continues, the fit is to be prevented,

(1) By medicines removing irritability.

(No. 19.) R Cort. Peruv. Opt. Subt.  
Pulv. gr. xv ad ʒ ij  
Capt. e Cyath. vin. generos.  
Horæ Quadrantis ad hor. iv. Intervallo ita ut  
Æger sumat. ʒ vi ad minimum inter duos Paroxysmos.

As great a quantity is to be given at a time as the patient's stomach will bear ; and the intervals between the doses are to be as long as possible.

The bark is to be omitted during the time the subsequent paroxysm should have continued, and is then to be repeated in the same quantity and

Cure.

manner, especially if any symptom of the fit should have recurred, provided always that the paroxysm has been greatly lessened. The same measures are to be pursued in the third period: afterwards the medicine is to be omitted for four or five days, and then returned to for 24 hours; and this is to be practised twice or thrice, (at longer intervals each time.)

If there be any symptoms of inflammation in the breast, they should be removed before the exhibition of the bark.

Symptoms of bile in the blood-vessels, are not to be attended to any farther, than as they render the intermissions imperfect.

If the bark has been given imprudently, *viz.* when the patient is strong, and no perfect intermission has taken place, we are to omit it till such intermission is procured by the above means;

means ; but even then it acts less power- Cure.  
fully than it would otherwise have done.

If the bark purges, from five to ten drops of laudanum may be given three or four times a day.

If the patient continues long bound, a stool may be procured by a small dose of rhubarb, or aloes.

If the Stomach will not bear the powder, the decoction or extract may be used ; or it may be applied in a glyster, or even externally, though these methods are never so sure of success.

If the disease attacks a weak patient, or has continued till a strong habit is much weakened, the bark is to be given at the time of the best remission ; it often brings on a severe but regular fit, and upon continuing its use the fever leaves the patient.

(2) By counteracting the cold fit at the time of its coming on.

No.



Cure.

(No. 20.) R Aq; Cinnam. Spirit. ʒj ad ʒij  
 Menth. vulg. ʒj  
 Tart. Emet. gr. fs ad gr. jfs.  
 L. L. gtt. xx ad xl  
 Syr. Croc. ʒij m

(No. 20.\*) R Aq; Menth V. ʒij  
 Sal. Alk. Volat. m gr. xv  
 Pulv. Ipec. gr. ij  
 Træ Theb. ʒth L  
 Syr. Simpl. ʒj m

Capt. Ante Paroxyfmi Accessionem;  
 Æger quoque in Lecto detineatur.

When the disease is cured, or the fits  
 become flight and irregular, the patient  
 is to be strengthened.

T H E

THE  
DOCTRINE  
OF  
INFLAMMATIONS.





T H E  
Symptoms, Distinctions, Prognostics,  
A N D  
I N D I C A T I O N S O F C U R E,  
W I T H  
T H E R E M E D I E S  
I N  
I N F L A M M A T I O N S.

**I**N every INFLAMMATION, the pul- Symptoms.  
sation of the arteries is increased;  
there arise a greater degree and sense of  
heat; a greater redness; an itching, soon  
converted to an acute, and often a throbbing,  
pain, augmented on the parts  
being stretched; a swelling produced  
by a distention of the capillary vessels  
and the veins, and sometimes by an ex-  
travasation of fluids; also a contraction,  
and inability of motion, in the mus-  
cular fibres.

More

## OF INFLAMMATIONS.

More fluids circulate through the part, and more are secreted in it when inflamed, than when in its natural state.

The sensibility and irritability are increased by inflammation, and are produced by it in parts where they did not subsist before.

INFLAMMATION is produced by

Causes.

External *stimuli*, mechanical, chemical, or medical.

*a.* Distention, or endeavour at destruction.

*b.* Division of an irritable part.

*c.* The neutral-salts of the blood or other stimulating matter thrown out or formed on the surface of an irritable part.

These causes operate more powerfully on habits in which the vessels have great strength or are acting strongly; and on parts that are very irritable or sensible.

Effects of inflammation on the system.

INFLAMMATION (*a*) sometimes has no effect on the system in general, (*b*) some-

sometimes it produces general inflammation; (c) sometimes symptoms of irritation

(a) In habits not very strong, if the inflammation be small, and the pain not violent, or if the part be easily distended, the system is not affected.

(b) In strong habits, in inflammations of substances of parts, or where the pain is great, and the patient not very weak, it produces general inflammation, by some called *Inflammatory Fever*; the Symptoms of which are, a hard, and for the most part a strong, full, uniform, and frequent pulse; blood when taken from the arm more fluid, and continuing longer fluid, so that the red globules fall to the bottom, the coagulable lymph coagulating afterwards strongly, and adhering to them, so as partly to form a crust on the top, called by some the *Buff*; a frequent respiration, attended sometimes with a cough; a dry white tongue and thirst; restlessness; urine remaining transparent without any cloud

General inflammation.  
or



or becoming turbid when cold, and sometimes depositing a lateritious sediment; universal redness, heat, and swelling; watchfulness and *delirium*; *stupor*, with red, swelled, protuberant, and often dull eyes, sometimes converted into a violent, sometimes into a low, muttering delirium, often at last terminating in convulsions and death, or ceasing when the inflammation is removed, sometimes before the termination of the inflammation, sometimes remaining after it; running out to a great length and wearing out the patient.

General inflammation differs essentially from fever, inasmuch as the symptoms of the first stage do not necessarily proceed, or accompany it, and as it does not increase by exacerbations followed with relaxations, and when excited continues to depend on its cause.

It is excited by many causes, besides inflammation.

(c) Where

(c) Where the pain is very great, or the habit very weak and irritable, or where an irritable part is affected, the symptoms of irritation take place, *viz.* a small, quick, frequent pulse; frequent respiration; sickness; universal restlessness, and want of sleep; urine remaining transparent when cold; depression of strength; faintings; coldness of the extremities, especially when an internal part is affected; delirium, convulsions, or spasmodic contraction of the muscles, sometimes terminating in death, or the depression of strength simply increasing till the patient dies; or he is wore out by the long continuance of the disease.

Symptoms of  
great irrita-  
tion.

Symptoms of irritation differ essentially from fever, inasmuch as they leave the patient immediately upon their cause being removed.

They may be excited by other causes besides inflammation.

Besides these, various other symptoms are often produced, when particular parts



are inflamed, and their functions thereby destroyed or hurt.

Progress and  
termination.

If the cause of an inflammation be removed, it sometimes goes off soon; sometimes continues for a long time, or terminates in another disease.

(A) It goes off by,

(a) *Simple Resolution*; when upon removing the cause, the symptoms diminish gradually, and at last leave the patient.

(b) *Resolution by Evacuation*; (1) when the mucous or other glands of the part inflamed, or near it, do in consequence of the inflammation secrete a considerable quantity of fluid, if it be mucous, at first thin and transparent, afterwards becoming viscid, and changing its colour to white, greenish, or yellow, sometimes streaked with blood, and not commonly acquiring its consistence and appearance of pus; in this case, while the secretion is watery, the inflammation of the mu-  
cous



cous membrane is increased ; but as the fluid acquires a proper viscosity and colour when it is said to be concreted, the disease gradually diminishes, and is frequently cured : (2) when an hæmorrhage arises in the part affected, and carries off the inflammation : (3) when a large or long continued evacuation happens from some part of the body, and puts a stop to the distemper,

Progress and termination.

(c) *Resolution in consequence of Fever* ; when a cold fit of fever is produced and cures the inflammation.

(d) *Metastasis* ; when an inflammation arises in another part, and carries off the primary one.

(B) The inflammation continues for some time without alteration, or terminates soon in suppuration, gangrene, or scirrhus.

N. B. In all these cases *callosities* are sometimes left.

Progress and  
termination.

(a) The inflammation continues for a considerable time without greatly increasing or diminishing, and without terminating in another disease.

(b) Suppuration ; (1) when a quantity of fluid is thrown out into any cavity, (the inflammation continuing) it ferments, and is converted into *pus*, which afterwards acts as a ferment on the solid parts, and gives occasion for the conversion of the whole into a matter similar to itself, the symptoms of the first disease going off. Sometimes a membrane is formed round the pus, which prevents it from acting upon the circumjacent parts ; but more frequently it likewise ferments with them, till it has made itself an opening by which it is evacuated. This happens sooner or later according to the distance of the inflammation from the skin, or the surface of a cavity opening externally ; for the parts between them and the original abscess are generally destroyed, and not the other surrounding parts. While this is taking place, the *pus* sometimes separates  
the



the muscles, and other parts, from one another, by destroying the cellular membrane.

Progress and termination.

After the *pus* is evacuated, a fresh inflammation arises; more matter is formed on the surface of the cavity; a quantity of flesh grows up and fills it; afterwards a scarf skin covers the whole, and the part is restored, the flesh which grew up in the cavity being converted into the muscles, tendons, nerves, blood vessels, &c. lost.

Sometimes the surface of the cavity continues to be destroyed; the ulcer is enlarged; a portion of the matter is absorbed, and producing hectic fever, the patient dies; or independent of absorption he is cut off by symptoms of irritation.

(b) (2) When a quantity of fluid is converted into pus upon the surface of an inflamed membrane, or other part, it sometimes ferments with the solids underneath, and forms an ulcer similar to that already described.



Progress and  
termination.

In inflammation of the substance of a part, suppuration takes place on the beginning of the fourth day ; it happens sooner in children, not so soon in inflammation of glands ; where the inflammation is not violent ; where any natural or artificial method of cure has diminished it. Suppuration is known to have taken place in external inflammation, by a fluctuation in the part, by the swelling in the neighbouring parts diminishing, and in consequence becoming more pointed in the inflamed part. In large external and in most internal suppurating, there is horror, rigor, and coldness at the beginning, and repeated at uncertain periods, and the mischief arising from the swellings pressing on the neighbouring parts is diminished or removed.

(c) Gangrene and mortification : in this case the symptoms of inflammation go off, and the part becomes paler, or of a brown colour, flaccid, and at last black ; the scarf skin is raised up in large pustules, which contain a semi-putrid *ichor* ; at last the whole part putrifies ;

trifies; the surrounding parts are affected with erisipelatous inflammation; and the gangrene and mortification spread, until they destroy the patient, by affecting a part necessary to life, or else by producing the symptoms of irritation.

Progress and termination.

This disease arises without any previous inflammation, from pressure, ligatures on the veins, weakness, extravasation of great quantities of blood, and the application of sedatives.

A phlegmonous inflammation takes place sometimes round the gangrened part, and occasions a separation and an ulcer, nearly similar to that formed by an abscess.

(d) *Scirrhus* and *cancer*: when the inflammation is carried off, but a quantity of matter is left in the secretory vessels of some gland, occasioning a hardness and swelling. This often continues for a considerable time without alteration; but sometimes without any sensible cause: sometimes upon the applica-



tion of a *stimulus*, the matter deposited ferments, and is converted into a peculiar fluid inflaming the part, and producing an ill-conditioned ulcer called an open cancer. In this ulcer good *pus* is never formed ; but the patient exhausted, and destroyed by the pain, the evacuation and the *stimulus* arising from the cancerous matter absorbed.

*Scirrhus* arises without any previous inflammation from the proper fluid stagnating in the gland, or extravasation from contusion, or *Venous Plethora*.

#### Prognosis.

*Simple Resolution* takes place when the system is not strong, when the inflammation is but small ; when it affects the skin only, or a soft part, or one not very sensible.

*Resolution by Evacuation* is produced (1) when the mucous membrane is primarily or secondarily inflamed, or, when in consequence of the inflammation, the mucous or other glands near the part affected, are stimulated to a



greater secretion ; (2) when the capillary vessels of the inflamed part are spread on a membrane constantly moistened, and in a cavity opening externally ; (3) is accidental.

*Resolution in consequence of Fever*, happens principally when the inflammation arose at the beginning of the hot fit, diminishing, but not entirely carrying off the fever : a febrile exacerbation arises in the evening naturally, or from some new cause, and takes off the inflammation.

*Metastasis* is accidental. The nearer the second inflammation is to the original one, the more violent it is, or the greater the sensibility of the part it affects, the more certainly it carries off the first disease.

(B) (a) Happens if the skin be the part affected, the disease not violent, and the cause be frequently repeated.

*Suppuration* happens, (1) when the cellular membrane, or parts covered with

## Prognosis.

with it, are affected ; it takes place more readily when the patient is young, or of a sanguineous temperament, or of a strong habit, or when the disease happens in the spring ; (2) when the skin is inflamed so that the scarf skin is raised from it ; or when a mucous membrane is affected, and the inflammation continues, notwithstanding the increased secretion of mucus ; or in wounds.

*Gangrene* and *mortification* happen when the part inflamed is irritable, or when there is pressure, either from the tenseness of the part, the contraction of a muscle, or external application.

*Scirrhus* happens when a gland is the seat of the disease, and the inflammation terminates without coming to suppuration.

*Indications of CURE in INFLAMMATIONS.*

## Cure.

RESOLUTION is to be procured, if possible.

I. INDICATION. The causes first pro- Cure.  
ducing the inflammation, and those  
which afterwards continue it, are to be  
removed.

The method of removing many of  
the causes is obvious. Peculiar means  
of taking off some of them are these  
that follow.

(A) Stimulating fluids, formed or  
secreted on the surface of an irritable  
membrane, are prevented from acting.

(a) By covering the membrane so  
that they cannot touch it, (1) with ex-  
pressed oils, such as sperma cœti, oleum  
amygdalarum, oleum olivarum, sebum  
ovillum, axungia porcina, butyrum;  
or (2) with vegetable or animal mucila-  
ges, as infusum seminum lini vel cydo-  
niorum decoctum radicis althœæ, facha-  
rum ichthiscolla.

(b) By destroying them with præpa-  
rationes mercurii, &c.

(c) By



Cure.

(c) By evacuating them.

(d) By taking off the irritability of the membrane with cortex peruvianus, præparationes plumbi, stanni, &c.

(B) Distention of the internal vessels, is removed.

By restoring the circulation to the external parts of the body. (Vid. Fevers, Ind. V.)

By keeping the patient in bed.

By the warm bath.

Stimulants applied to the system are for the most part improper.

(C) The endeavour to distend the capillary vessels beyond their tone, is avoided by relaxing them with aqua tepida scilicet ad caloris corporis humani gradum, olea expressa pura. (Vid. *A. a. j.*)

II. INDICATION. The action of the Cure. arteries is diminished.

(A) By emptying them. The methods are, (a) venæ alicujus majoris in brachio, vel corporis alia aliqua parte sectio ita ut quam citissime magna sanguinis copia eximatur: (b) Venæ vel arteriæ sectio, vel hirudinum applicatio ad partem affectam: (c) Purging with salia neutra, tartarus, manna, cassia fistularis, fructus tamarindorum, radix jalappæ.

(B) By the application of sedatives to the stomach, as acidum vitriolicum, muriaticum, limonum; infusum theæ, sarsæ; aqua calida; nitrum.

(C) By the application of sedatives to the part, as (a) Papaver, Herbum absinthii, matricariæ; radix bryoniæ albæ: (b) Flores rosarum rubrarum, acidum vitriolicum, muriaticum, acetosum; alcohol; farina avenæ; aquâ soluta vel commixta: (c) Præparationes cupri, plumbi, zinci; alumen.

(D) By

Cure.

(D) By raising an inflammation on the skin near the part originally affected, (except when the skin itself is inflamed) by means of cantharides, semina finapi, cauterium actuale, acida, alkali volatile, frictio.

III. INDICATION. Is the management of resolution by evacuation from the mucous or other glands, of the part or near it.

(A) The evacuation is produced or assisted by stimulants, as, erhina sialagogica expectorantia purgantia diuretica.

(B) (Vid. Ind. 1st. A. a.)

(C) The secretion of the *mucus* is to be stopped, after the inflammation is carried off; (a) by strengthening the system; (b) by applying astringents, 1) to the part, as, salia & calces metalorum: (2) to the stomach, as, gallæ, alumen, &c. opium, balsamum copaibæ, peruvianum, canadense, terebinthini.

Where



Where the inflammation cannot be Cure.  
 cured by *Resolution*; or when an external inflammation has arisen in the hot fit of a fever, and has diminished, or entirely carried it off, or when the inflammation has cured or diminished some worse disease than itself; and sometimes inflammations occupying glands, *suppuration* is to be produced; in order to which.

IV. INDICATION. The inflammation is to be kept in a proper degree.

(A) if it be too violent, and tending to gangrene, it is to be diminished. (Vid. Ind. 2.) (*A. a. c.*) (*C. a.*) (Ind. 1st. C.)

(B) If it be too slight, it is to be increased by stimulants:

(a) Applied to the stomach, as (1) cortex peruvianus; (2) balsama et resinæ; (2) belladonna, solanum, cicuta.

(b) Ap-

Cure.

(b) Applied to the part, (1) farina lini, fænugreci, oleum lini; (2) galbanum, terebinthinum, thus. These last, though sometimes used, are generally too powerful.

V. INDICATION. If a gangrene has come on, it is to be prevented from spreading.

(A) By vinum, aromata, &c.

(B) By cortex peruvianus.

(C) By stimulating the part with oleum terebinthini, scarificatio, &c.

VI. INDICATION. The management of a *Scirrhus*.

(A) It is prevented by producing *suppuration*.

(B) If it be already formed, and (1) is large, increasing, and detached, it is  
to

to be cut out, or destroyed by caustics ; Cure.  
or (2) if it be small, and continues of  
the same size, nothing is to be done,  
*discutients* are dangerous.

VII. INDICATION. The management  
of a *Cancer*.

(A) Good *pus* is produced by (Vid.  
Ind. 4. *B. a.* 3.) *arsenicum* ; but these  
medicines very seldom are efficacious.

(B) The pain is relieved by destroying  
the sensibility of the part with *præparati-*  
*ones plumbi*, &c.

P

INTERNAL





INTERNAL PHLEGMONOUS  
INFLAMMATIONS.





## T H E

## INFLAMMATION of the BRAIN.

**I**T arises, from an increased action of Causes.  
 the vessels in the system, produced by hard drinking, anger, and indigestible, or viscid food in the stomach; from an exposure of the head to the sun; or from general inflammation happening at the beginning of a fever, or in any other disease.

*Delirium* comes on with watchfulness, or restless, and unrefreshing sleep, with dreams, loss of memory; insensibility to external objects; the functions of the body are disturbed; the imagination hurried, and discourse incoherent; the patient picks hairs from the bed cloaths, or hunts flies which he imagines are in the air. Symptoms  
and causes of  
delirium.

It may happen from fever, *inflammatory diathesis*, great irritability, and *mania*, without any topical inflammation of the brain.

## Symptoms.

There arises a throbbing pain in the internal parts of the head, which, if the *meninges* are affected, is acute; if the substance only, obtuse, and sometimes but just sensible. The eyes for the most part are red, and swelled, tears frequently flow from them, and sometimes a watery *mucus*, or blood drops from the nose: the face is often flushed. These symptoms are attended with more or less of general inflammation, according as the *meninges*, or substance of the brain, are affected. They are followed by *stupor* and *delirium*, which sometimes become violent, and are attended with convulsions; and in any case, unless some natural or artificial means of *resolution* are applied, the patient for the most part is cut off. Sometimes, however, the inflammation goes on to suppuration, especially if the substance of the brain is affected: in that case, the symptoms abate, a stupor only being left: but in process of time, unless the *pus* be absorbed, the whole brain is destroyed.

It

It is prevented by avoiding or counteracting the causes. Prevention.

The most powerful means of *Resolution* are immediately to be employed. Cure.

Fiat V. S. e brachio ad  $\zeta$  xij, xx,  
vel xxx pro diathesi inflamma-  
toria aut corporis viribus et re-  
petatur pro re nata.

After the strength of the system, or general inflammation are diminished.

Fiat venæ sectio e venâ jugulare, vel  
arteriâ temporale; vel tempori-  
bus applicenter hirudines.

At the same time evacuations from the intestines may likewise be performed with advantage.

(No. 21.) R Infus. Tamarind.  $\zeta$  iv.

Sal. Glaub. ver.  $\zeta$  fs and  $\zeta$  ifs.

Vel. Tart. Solub.  $\zeta$  fs ad  $\zeta$  vj

Vel. Polychrest. Rupel.  $\zeta$  fs ad  $\zeta$  j

Syr. Rosar.  $\zeta$  ij

P 4

m. Ft.



Cure.

m. Ft. Haust. purgans Capt. post V. S.  
et repet. pro re nata.

When the purgative is not operating  
(No. 4.) or (No. 13.) may be given.

After having diminished the strength  
of the vessels,

Applicet. Emplast.. Epispast. Ca-  
piti rasō.

The food throughout the disease is to  
consist only of decoctions of farinaceous  
seeds in water, acidulated.

*N. B. When an inflammation arises at  
the beginning of a fever, and it, as well  
as the general inflammation, continues,  
such fever is also to be attended to in the  
cure of the inflammation, and the treat-  
ment varied according to the violence of  
them.*

## The ANGINA.

(Commonly called the Inflammatory Angina.)

**I**T is an inflammation of any of the parts about the throat, excepting the skin, and mucous membrane. Definition.

It arises from cold, distention of the parts; *stimuli* applied to them, and the other causes of inflammation. Causes.

It has no peculiar predisponent cause which is known, but is sometimes epidemic.

The symptoms are those common to inflammation; or those arising from the passage of the air into the lungs; of the food or drink into the stomach; of the blood in the jugular veins; or the serum in the lymphatics of the neck's being obstructed. Symptoms.

The common symptoms of inflammation are, (according to the part affected)

Symptoms. affected) either external swelling, with redness and pain, gradually increasing, and becoming harder; or swelling with redness, and pain in the tonsils, *fauces*, *velum pendulum palati*, about the root of the tongue, or *pharynx*, gradually increasing; or, lastly, a very acute pain in the region of the *larynx*, without any external appearance.

If the mucous membrane be affected, a large quantity of thick, viscid mucus is secreted

More or less of general inflammation is produced according to the part affected, or the strength of the patient.

If the *larynx*, *trachea*, or parts adjacent, are inflamed, the passage of the air into the lungs is obstructed, and there arise a difficulty of breathing, anxiety about the *præcordia*, swelling of the veins of the neck, swelling of the face, *stupor*, lividness about the eyes and in the whole face, *delirium*, depression of strength, a very frequent, irregular pulse, and



and at length the patient is suffocated. Symptoms.

If the muscles serving for deglutition, the tonsils, *pharynx*, or parts adjacent are affected, there arise a pain in attempting to swallow, with a sense of swelling in the throat; a difficulty in swallowing; *nausea*; the food and drink return by the nostrils, or getting into the *larynx* produce violent fits of coughing; at last the passage of the food and drink into the stomach, is totally stopped up, and the patient is destroyed.

If the lymphatics of the neck are compressed, there arise *œdematous* swellings of the face, and other parts of the head.

If the jugular veins are obstructed, *œdematous*, and livid swellings arise in the face, tongue, throat, and parts adjacent; the eyes become red and protuberant; the patient is affected with a *stupor* and *delirium*, and at last is cut off.

Diseases to be distinguished from the Angina.

Swellings about the throat arise from *scirrhus*, *scrophula*, and dropsy, as well as from inflammation; as do likewise pain, and difficulty of swallowing and breathing from catarrh, exulceration, spasmodic contraction of the muscles, and *paralysis*.

Termination of the inflammation.

If the patient is not destroyed by the respiration, deglutition, or brain's being affected, the *Angina* terminates, as other inflammations, but principally in suppuration.

When suppuration takes place, the swelling diminishes, and the symptoms are somewhat relieved; the *pus* opens itself a way externally, or internally, and generally produces an ulcer easily cured; but it sometimes is apt to form *sinus's*, or fall into the lungs and bring on exulcerations in them.

Gangrene and mortification in most parts of the throat are fatal.

N. B. *As inflammations of these parts about the throat may arise independent*

*dent of one another, as their symptoms, progress, and termination, are various, they ought to be considered as different diseases.*

The CURE is best performed by *Re-* Cure.  
*solution* ; for this purpose.

1st, Evacuations are to be produced,  
*viz.*

(a) By bleeding from the arm in quantity according to the general inflammation, and repeatedly, until it be greatly diminished.

(b) By purgatives, as (No. 21.) repeated every day for the first two or three days of the disease.

(c) By bleeding from the part by opening the jugular veins, or those under the tongue, or applying leaches.

(d) The inflammation may sometimes be diminished, by augmenting the secretion from the mucous glands of the mouth and throat, and we are to endeavour



Cure.

your to prevent the mucous membrane from being affected by the salts of the thin mucus.

2d, By producing inflammation upon the skin.

(No. 22.) R Ol. Olivar. ʒj.

Alkal. Volat. Caust. ʒij  
ad ʒj.

Camph. Gr. xxx.

m. Ft. Liniment. inung. Fauces externe sæpius.

After the general inflammation is considerably diminished by evacuation, blisters are to be applied as near the part as possible, provided the skin itself be not inflamed.

3d, If the external inflammation be considerable, fomentations and poultices are to be applied.

(No. 23.) R Flor. Cham.: vel Summit.: Absynth.: vel Summit. Centaur. Minor.: Manip ij.

Rad

Rad Bryon. Alb. recent. Cure.

℥j.

Folior Malv.: vel Alth.

Man. j. contunde et  
leviter coque in Aq.

Font. ℔ iiij.

Colatura utatur pro Fotu  
ter indies.

Add. Herbis Coctis.

Ungent Simp. ℥ij.

Ft. Cataplasma Part. affect. appli-  
candum.

4th, When we are not exhibiting pur-  
gatives, or in the intervals of their ope-  
ration, (No. 4.) or (No. 13.) are used  
with advantage.

(No. 24.) R Aq; Cinnam. Ten. ℥viiij  
Oxymel Scillit. ℥fs  
m

Ft. Gargarisma utatur sæpius.

(No. 25.) R Syr. ex Alth. }  
Ol. Amygd. } aa ℥j.  
Conserv. Cynosb. ℥fs

m Ft. Linctus Capt. Coch. unum par-  
yum frequenter.

(5th) By sedatives as (No. 14.)

The

Cure.

The air of the room should be moderately warm, and the patient ought to avoid speaking, and for food to make use of the barley water only.

If the passage of the air into the lungs be so much obstructed as to threaten immediate suffocation, *bronchotomy* is to be performed.

If no fluid can be got into the stomach, the blood-vessels may be supplied in some measure by glysters.

(No. 26.) R Aq; Font.  $\text{℥vj}$   
Amyl. Alb.  $\text{℥iij}$ .

solve.

Ft. Enema quartâ quâque horâ injic.

If the blood be prevented from returning from the brain, so as to endanger immediate suffocation, the patient is to be bled in the jugular veins.

If the inflamed parts suppurate, the mouth and throat are to be kept moist with,

(No.



(No. 27.) R Infus. Sem. Lin. ℥ j

Cure.

Sach. Alb. — ʒj

Succ. Aur. Hisp. ʒss

And as soon as there is any fluctuation of matter felt, an opening is to be made into the abscess.

## The Inflammation of the LUNGS, or PERIPNEUMONY.

**I**T is produced by cold applied to the Causes.  
skin, mouth, or stomach; by general inflammation; by an over distention of the lungs; or by catarrh.

Any solid substance falling into the lungs by the *trachea*, or a wound penetrating into them, produce the inflammation, but with different symptoms.

These causes act more powerfully in people subject to inflammation in general; in those who have narrow chests; or who have been formerly affected with

Q *peripneumony*

Cure.

*peripneumony, asthma, or frequent catarrhs*; where the lungs adhere to the *pleura*, so as at any time to prevent a free respiration; or where external inflammations that were become habitual, are taken off.

Symptoms  
and Progress.

The inflammation begins with an obtuse pain in the breast, excepting where the external membrane of the lungs is inflamed, and then it is acute, sometimes occupying one side, sometimes both, accompanied with a difficulty of breathing and cough, the air from the lungs being peculiarly hot. There arise a sense of fullness in the *thorax*, anxiety about the *præcordia*, with restlessness, loss of appetite, and sleep; a frequent pulse, sometimes hard, but seldom strong, or regularly full; the tongue is covered with mucus which is often yellowish; and often turbidness in the urine. The difficulty of breathing, and sense of fullness increase: and a quantity of thick mucus being secreted occasions a sound, as the air passes through the branches of the *trachea*. If the patient attempts to lie down,

down, there is an appearance of an immediate suffocation; he is therefore obliged to continue with his head and shoulders more or less elevated. The passage of the blood through the lungs is obstructed, so that the veins of the neck begin to swell; œdematous swellings affect the lower extremities and sometimes the other parts; the pulse becomes every way irregular; the face swells, and is of a dark red colour, especially about the eye-lids and cheeks; the tongue likewise swells, and becomes of a dark red; the eyes are dull; *stupor* and a low *delirium* succeed; and the patient is destroyed from the affection of the brain, or he is suffocated.

Symptoms  
and Progress.

If the symptoms do not rise to so great a height, and, at the same time, no means of *Resolution* have been applied or have arisen naturally before the fourth day; or if those means are not sufficiently powerful; or if they are not continued until the disease is totally carried off, a suppuration takes place, and is in-



Symptoms  
and Progress.

icated by slight and frequent shiverings, the pain at the same time going off gradually ; the sense of fullness and cough, with the other symptoms diminishing, and the patient being only able to lie on that side which was most affected. If the inflammation be slight or not purely phlegmonous, or has been diminished by any means of resolution, the suppuration may be retarded even sometimes as far as to the fourteenth day.

SUPPURATION, unless the abscess breaks soon into the lungs, or the *pus* is all absorbed into the vessels, is generally fatal, producing hectic fever, and pulmonary consumption.

If the inflammation be very violent, gangrene and mortification sometimes, though seldom, arise. In this case the breathing is somewhat relieved ; but the pulse becomes extremely frequent and weak ; the other symptoms of irritation come on ; the patient spits up a blackish, foetid ichor, and is soon carried off.

The

The inflammation of the LUNGS is a disease of the bronchial artery only.

They who are destroyed by acute diseases, are by no means cut off at last by an inflammation of the lungs, as has been supposed.

It should be distinguished from difficulty of breathing in fever; from other inflammations of the breast; from *catarrh*, *asthma*, and *peripneumonia-nota*, and those difficulties of breathing which happen in chronical diseases. Distinctions.

It admits of a natural cure,

1st, By a secretion of *mucus* from the lungs, spit up at first thin, and with uneasiness, becoming gradually thicker, and of a greenish, or yellow colour, often mixed with blood, relieving, and gradually diminishing the symptoms, so as to carry off the disease before the fourteenth day; or viscid and with great difficulty becoming thinner, and altering in the same manner.

If there be a great *hæmorrhage* from the lungs, it happens for the most part, that either the patient is immediately suffocated, or an ulcer is produced.

If the matter spit up contains hard masses, or is of different colours from what has been described, although the symptoms should be relieved, there is danger of an ulcer.

If the secretion continues watry, the disease is sometimes increased by it, or converted into a catarrh.

If the *peripneumony* is not carried off before the fourteenth day, the lungs commonly suppurate, although not always.

2d, By an inflammation, or hæmorrhage, arising in some other part of the body.

Cure.

The cure is performed, (1) by simple *Resolution*, or (2) by evacuation from the mucous glands.

The



The first is obtained,

Cure.

(A) By emptying the vessels of the lungs.

(a) By bleeding. We are to be ruled as to the quantity of blood taken away, by the strength of the patient. For when from the violence of the inflammation the pulse is small, frequent, and regular, it often rises, and becomes regular after the operation. From the disease's increasing, or recurring, it is often necessary to repeat this evacuation two or three times.

(b) Purging with strong purgatives is improper in inflammations of the thoracic viscera of the phlegmonous kind, but the body is to be kept open by laxatives.

(c) By bleeding from the skin of the breast.

(d) By producing a free circulation in the other parts by (No. 4. or No. 13.)

Cure.

(e) By keeping the patient in an air moderately warm.

(f) With this view the ancients applied ligatures to the arms and thighs, to confine the blood in the veins.

(g) To these methods stimulating medicines have been added, such as volatile alkali to produce sweating; but altho' these be useful in affections of the lungs where there is a flow of blood on them with little phlegmon, they are for the most part improper in peripneumony.

(B) By inflaming another part; (a) by rubbing (No. 22.) on the side; (b) by blisters, which are applied with greater advantage to the side and back, than to the extremities.

For the management with regard to the food (Vide the *phrenitis*.)

The second method of cure is performed.

(A) By

(A) By increasing the secretion from the mucous glands, by stimulants. Cure.

(No. 28.) R Aq; Puleg.  $\mathfrak{z}$ jfs  
 Oxymel. Scil.  $\mathfrak{z}$ j ad  $\mathfrak{z}$ ij  
 Aq; Menth. Piper.  $\mathfrak{z}$ j  
 m Ft. Haust. Capt. quartâ quâque hor â.

(No. 29.) R Aq; Puleg.  $\mathfrak{z}$ jfs  
 Gum. Ammon. gr. x ad xv.  
 Syr. Limon.  $\mathfrak{z}$ ij  
 m Ft. Haust. Capt. ut supra.

By inhaling the vapour produced from the infusion of pectoral herbs.

(B) By defending the mucous membrane from the salts contained in the *mucus* so secreted, with mucilaginous, or oily medicines.

(No. 30.) R Amygd. decort.  $\mathfrak{z}$ j  
 Gum. Arabic  $\mathfrak{z}$ jfs  
 Mel. — —  $\mathfrak{z}$ iv  
 Aq; Font. — lbij  
 m Ft. S. A. Emulsio bibat poculum  
 frequenter.

Or, (No. 25.) may be given.

Opiates



Cure.

Opiates have sometimes been used, when the *mucus* spit up was thin, and the cough troublesome : but as for the most part they increase the difficulty of respiration, they are commonly hurtful.

(C) If, notwithstanding the spitting, the inflammation should increase, moderate bleeding is useful to prevent the suppuration ; but the taking away a great quantity diminishes or stops the secretion.

The same remedy is to be used, if much pure blood is spit up.

During the first days, especially where the patient is strong, the food ought to be the farinaceous decoctions acidulated. To these should be afterwards joined preparations of the farinaceous seeds, with preserved juices of fruits, (as currant jelly, &c.)

The remedies in the first method, except the plentiful and repeated bleeding, may be also used in this ; and, on  
the

the other hand, those recommended under this head, may be used along with the first : so that the only question is, whether the cure is to be principally trusted to the bleeding, or to the evacuation from the lungs by spitting. Cure.

The first method is to be followed in strong ; the second in weak patients, and when the disease is accompanied with the symptoms of the first stage of fever.

The obstruction to the passage of the blood through the lungs, sometimes retards the flowing of the serum from the thoracic duct into the left subclavian vein, and produces dropfical swelling of the extremities ; but these go off with the disease, and seldom require any particular treatment.

## The PLEURISY ; or

## INFLAMMATION of the PLEURA.

IT has been much disputed, whether this disease be an inflammation of the *Pleura*, or of the external coat of the lungs. It appears most probable, that the inflammation arises in the *Pleura*, and spreads from thence to the lungs.

## Causes.

Its causes are, cold applied to the skin ; sudden and great distention of the *Pleura* in inspiration ; drinking cold liquors after being heated by violent exercise. The pleurisy, and most other inflammations, arise frequently in the hot fit of fever, most commonly in the first period, sometimes in the second, and less frequently in the third or subsequent ; either from the *inflammatory diathesis* alone, or from a *stimulus*, too slight to affect people in perfect health.

Adhesions of the *Pleura* to the lungs affecting the breath, and the causes which render people liable to peripneumony, have the same effect with regard to the pleurisy.

When



When a pleurisy, or other inflammation, arises in the hot fit of fever, it is preceded by *horror* and *rigor*, cold, frequency of the pulse, and several of the other symptoms of the first stage, (v. page 3.) These are followed by the symptoms of the second stage, (v. p. 4.) together with those of general inflammation, (v. p. 30.) after which, the pain, and other symptoms of the inflammation in the side or part affected, take place; and the symptoms of the first stage of fever commonly leave the patient, those of the general inflammation continuing. Sometimes the symptoms of the first stage of fever are only relieved. In this case, anxiety about the *præcordia*, transparent urine, particular evening *paroxysms*, &c. continue along with the inflammation, produce a different progress and termination of the disease, and require a variety in the treatment.

The manner in which inflammation arises in fever.

When the inflammation of the *Pleura* comes on, whether it be the original disease,

Symptoms and progress of the pleurisy.

Symptoms  
and progress  
of the pleu-  
rify.

disease, or preceded by the symptoms of fever, it begins with an acute pain in the side, commonly above the short ribs, sometimes towards the back (when it is less violent) increasing greatly on inspiration, diminishing on expiration, and from thence producing a difficulty of breathing. The inspirations are short, the ribs kept as much at rest as possible, and the diaphragm and muscles of the *abdomen* move considerably.

In all difficulties of respiration carried to a height, the patient is obliged to have his body more or less in an erect posture; the shoulders and clavicles are raised; the nostrils move, and the mouth is opened.

The difficulty of breathing in a pleurify produces a cough, which is short, suppressed, and sometimes dry; but at other times is attended with a spitting of *mucus* from the lungs, at first thin, and proceeding afterwards exactly as in the peripneumony, and relieving or curing the disease in the same manner.

If



If the patient be not affected with general inflammation, before this inflammation, it is always brought on in a few hours ; and its symptoms are sometimes so severe as to destroy the patient. The difficulty of respiration also increases, sometimes to so great a degree, as to prevent the blood from passing through the lungs, and the brain is compressed ; or he is suffocated with the same symptoms as in the peripneumony.

Symptoms  
and progress  
of the pleu-  
rify.

If gangrene and mortification take place, the pain ceases suddenly, without any apparent cause ; the pulse is very frequent, quick, small, weak, and often irregular ; *delirium*, with convulsions, come on ; and the patient is certainly destroyed.

If he does not die in any of these ways, and if the disease be not relieved by the spitting, or by some other natural, or artificial method, matter is formed ; which is shewn by irregular coldness and shiverings, the pain going off, or becoming slight and obtuse. If the  
matter



matter points externally, a fluctuation is felt on the part affected; if the pus is contained in the cavity of the *thorax*, it is felt between the lower ribs, and the patient cannot lie on the opposite side. If any means of *Resolution* have been applied, so as to diminish the inflammation, and a suppuration nevertheless comes on, it often does not begin till late in the disease, sometimes not before the fourteenth day.

This termination is most commonly fatal.

Sometimes, instead of a formation of matter, there is an extravasation of *serum* and coagulable lymph into the cavity of the *thorax*, attended nearly with the same symptoms, and equally fatal.

It is cured naturally by a spitting, and the other means enumerated in the *peripneumony*. (v. p. 50.)

Progress of an inflammation attended with fever.

If this, or any other inflammation, begin with the symptoms of the first stage

stage of fever, and they remain after the pain has arisen, sometimes a crisis happening in the fever, both diseases are carried off; or when the inflammation is diminished by any natural or artificial means; it frequently happens that the fever continues, increases, and is attended with weakness, till the patient die.

If the inflammation go off by *Resolution*, the *Pleura*, and external membrane of the lungs, generally adhere. Slight inflammations of this, and other membranes, are often attended with no other symptom, but a degree of soreness; nor any consequence, but adhesions.

It should be distinguished from other inflammations of the breast, *diaphragm*, intercostal muscles, intestines, and liver; from spasmodic pain in the side, or intestines; and from rheumatism of the side.

As in the pleurisy, the *inflammatory diathesis*, or general inflammation, is greater

Cure of the  
Pleurisy.

Cure of the  
pleurisy.

greater than in most topical one's; it yields better to evacuations, especially to bleeding. To this, therefore, in general we trust principally for the cure; and in the case of a strong habit, take away from twenty to thirty ounces of blood at once; repeating the blood-letting, if the disease continues, to twelve, ten, eight ounces, or less, according to the circumstances, as long as the pulse is hard, unless the symptoms of the first stage of fever have continued: in this case, such a quantity of blood must not be taken away, nor the bleeding so often repeated.

All the other remedies recommended in the peripneumony, are equally applicable in the inflammation of the *Pleura*; and are to be used in aid of the bleeding from the system in general.

Cupping glasses, with and without *scarification*, have been applied in both diseases, sometimes with advantage; but the cold air, to which the skin is exposed



exposed during the operation, often over-balances the good effect of it.

The food is to be the same as in the peripneumony.

When the symptoms of the first stage of fever precede this, or any other inflammation, and remain after it takes place, bleeding often carries off the general inflammation; but the inflammation and fever continue. In this case, further evacuation is of no use, and therefore we must proceed in the cure by the other methods recommended in each inflammation: in this, for example, by expectorants, relaxants, blisters, &c. If the fever should continue, and the symptoms of weakness come on, the strength must be supported, as has been shewn in the end of fevers, notwithstanding some little pain remaining in the inflamed part.

Treatment of an inflammation attended with fever.

### The Inflammation of the INTER-COSTAL MUSCLES.

The spurious  
pleurisy.

**T**HIS disease has been called the *Spurious Pleurisy*. It arises nearly from the same causes, is attended almost with the same symptoms, and is to be cured in the same manner.

Its difference from the pleurisy just now described, appears in these particulars: it may be produced by external causes; a swelling appears externally, with pain on the parts being touch'd; there is less pain on inspiration, and of consequence not so great a difficulty of breathing; the cough is for the most part dry; the general inflammation does not arise in so great a degree; the lungs are not so apt to be affected; the patient is never suffocated; and there is but little danger from suppuration.

It is seldom or never cured by a spitting; but on the other hand, fomentations

tions and poultices are applied to the part, with much greater effect than in the pleurisy. Purgatives may also be used with greater freedom.

### The inflammation of the MEDIAS- TINUM.

THIS disease is also in many things similar to the pleurisy: its causes are the same. The pain strikes obliquely from the *sternum* thro' the breast to the back: there is a difficulty of breathing, and cough, attended sometimes with a spitting. These symptoms, however, are not so violent as in the pleurisy; nor is the pain on inspiration so much increased, or the *inflammatory diathesis* so great; suppuration is with greater difficulty avoided; and, when it happens, is commonly fatal.

Inflammation  
of the medi-  
astinum.

It is to be cured in the same manner as the pleurisy.



## The Inflammation of the PERICARDIUM.

Inflammation  
of the peri-  
cardium.

**T**HIS also has many things in common with the inflammation of the *pleura*; but the pain is deeper seated, and is not so much increased upon inspiration.

If the heart is affected, the pulse becomes small, irregular, and intermittent, with immense anxiety. The patient falls into *syncope*s, and is soon destroyed.

It is to be treated also as the pleurisy.

## The PARAPHRENITIS, or Inflammation of the DIAPHRAGM.

The para-  
phrenitis.

**I**T arises from the same causes as the inflammation of the *Pleura*. The pain is very violent and deep seated in the lower part of the breast, or under the short ribs; or striking between them and the back: the belly is drawn up,  
and

and kept as much at rest as possible ; the respiration is excessively quick, small, and difficult, and performed principally by the muscles of the breast ; the patient is frequently affected with sickness and hicup ; the pulse is for the most part very frequent, small, hard, and often irregular ; there is great anxiety ; the other symptoms of irritation (vide p. 31.) come on, and death frequently ensues. If this does not happen, the progress, termination, and manner of treatment are nearly the same as in the pleurisy.

Inflammation  
of the para-  
phrenitis.

Of these inflammations in the breast, that of the *Pleura* near the fore part of the ribs, and that of the lungs, are the most frequent.

The inflammation of the *Pleura* is almost always attended with some degree of the inflammation of the lungs ; sometimes all these parts are inflamed together : but more commonly only one at a time in the same patient.

## The Inflammation of the INTESTINES.

The disease.

**T**HE inflammation of the exterior coats of the INTESTINES (of which the symptoms and manner of treatment are here laid down) differs greatly from that of the interior, villous, or mucous membrane: this last being attended with dysentery, or *apthæ*. (Vide the Dysentery.)

The causes.

It is brought on by external cold, fever, indurated *fæces*, heavy or hard bodies lying in the intestines, intromissions, adhesive stimulants, spasmodic contraction of the intestines, *hernias*, and wounds.

Symptoms  
and progress.

The symptoms are a pain in the belly, occupying different parts according to the intestine affected; but fixed to the place in which it arose at first. It is extremely acute, except when the disease arises from a wound, and then it is sometimes hardly sensible; it is generally



rally equable, sometimes however increasing by fits, and sometimes diminishing a little. For the most part the whole belly is affected, at the same time, with spasmodic pains and flatulency. The pulse becomes small, hard, frequent, quick, and often at last irregular and intermittent. Coldness of the extremities, together with a sudden and great prostration of strength take place. The muscular fibres of the inflamed part contract, so that nothing can pass through; and sometimes the *sphincter ani* in such a manner that a small pipe can, with difficulty, be introduced into the *rectum*. Flatulencies in the stomach, sickness, violent reachings, and vomiting, are frequently produced. The tongue is dry, with great thirst, and the urine transparent, and sometimes pale, in small quantity, and discharged with difficulty. The breathing is quick, the patient bending forward and compressing his belly, the abdominal muscles being after spasmodically contracted; and from the irritation the patient is cut off, sometimes simply, sometimes

Symptoms  
and progress.

Symptoms  
and progress.

sometimes with delirium and convulsions.

The inflammation frequently terminates in gangrene and mortification, in which case the pain goes off, and the patient appears to himself for a little relieved ; but the pulse continues frequent, small, and often irregular, and the extremities cold : and he is cut off.

If it be left to itself, this disease kills sometimes in ten or twelve hours, and almost always before the end of the third day ; so that there is seldom any suppuration. But if the intestines should suppurate, the pain diminishes, and is converted rather into a sense of distention ; irregular cold fits, with the other symptoms of internal suppuration arise ; and the contraction of the muscular fibres of the intestines, the great frequency of the pulse, and other symptoms, go off.

There is a greater chance of a suppuration's taking place in the colon than in the *duodenum*, *jejunum*, or *ileum*.

The

The abscess may break either into the cavity of the *abdomen*, or into the intestinal canal. In the first case it is generally fatal, producing a hectic fever; in the second, the *pus* is evacuated by the *anus*, sometimes at first pure, afterwards mixed with the *fæces*, gradually diminishing if the ulcer heals, and the patient is restored; or a considerable quantity of matter continues to be discharged, a hectic fever is produced, and he sinks.

Symptoms  
and progress.

At the beginning of the disease, after the pain has continued for a few hours, sometimes a great secretion takes place in the intestines; the villous membrane is also affected with inflammation, and it is converted into a dysentery: on the other hand, when in an inflammatory dysentery the secretion is imprudently checked by astringents, this kind of inflammation often arises.

It should be distinguished from the stone in the kidneys or ureters, from inflammation

Distinctions.



flammation of the kidneys, and other abdominal *viscera*; from the pleurisy, and other inflammations of the *thorax*; and particularly; from spasmodic pains in the intestines, and obstruction of the passage through them where there is no inflammation.

Cure.

It is to be cured by the immediate application of the most powerful means of *Resolution*; we are therefore to bleed to the quantity of 12 or 16 ounces, notwithstanding the smallness of the pulse, and seeming weakness; for the pulse becomes fuller, and the prostration of strength goes off, when the inflammation is diminished; as, on the other hand, they are increased by stimulants: the bleeding is to be repeated at short intervals till the pulse becomes soft.

Purgatives are contra-indicated by the contraction of the inflamed part; and when they have been given, and have not purged, they have often evidently increased the pain, and other symptoms: but evacuations from the intestines by  
means

means of glysters, are made with advantage, and (No. 9.) may be thrown in every two or three hours, till a stool is procured. Cure.

Relaxants have not so frequently been exhibited internally, as in other inflammations: nevertheless when used, they are of great service. (Vid. No. 13. 4.)

The circulation is to be brought to the surface of the body by the warm bath, or fomentations applied to the belly: but great care is to be taken, lest cold from the air or moisture in coming out of the bath, or changing the fomentations, should do more mischief than the remedy does good: these are also useful when the *anus* is much contracted, so that glysters cannot be given.

Narcotic and sedative fomentations (No. 33.) are also useful.

Some degree of inflammation of the skin of the belly has been raised by cupping-

Cure.

cupping-glasses with benefit: but blysters have not been commonly employed.

If these means should fail of success, opiates sometimes cure by taking off the contraction, especially when joined with relaxants.

(No. 31.) R Aq. Menth. Vulg.  $\mathfrak{z}$ iss  
Syr. Diacod.  $\mathfrak{z}$ ij ad  $\mathfrak{v}$ j.  
Tart. Emet. gr.  $\frac{1}{3}$  ad gr.  $\mathfrak{ss}$ .  
m Fiat Haustus.

The food, both during the inflammation, and for some days after it is cured, ought to be farinaceous decoctions, or moist preparations of the farinaceous seeds, as panada, &c.

## The Inflammation of the STOMACH.

Causes.

**I**T arises nearly from the same causes as that of the *Intestines*, excepting introsisception, hardened *fæces* and *hernia*,



*nia* ; and it is more liable to be produced by acrid substances.

The symptoms are for the most part the same in both diseases, excepting the situation. In this case the pain occupies the region of the stomach ; and even the mildest things thrown down increase it greatly, and, at the same time, bring on the sickness and vomiting : the disease is altogether more acute ; and, unless the most powerful means of relief be immediately employed, proves fatal.

Symptoms  
and progress.

It is cured by the same method as the inflammation of the intestines ; excepting only that we can seldom exhibit any internal medicines, on account of the great irritability of the stomach.

## The Inflammation of the RECTUM.

**I**T is seldom so acute as that of the *Duodenum*, *Jejunum*, or *Ilium*, nor so apt to produce smallness of the pulse, or coldness of the extremities, or to affect

Symptoms  
and progress.

fect the stomach; neither is there such a stricture as to render the intestine impervious, and it more frequently terminates in suppuration.

The cure is the same, except that purgatives are used with advantage, and laxatives ought always to be employed.

### The Inflammation of the SUB- STANCE of the LIVER

Causes.

**I**T is produced by the common causes of internal inflammation, and by obstruction of the hepatic ducts, or *Ductus Communis Choledochus*, and is more common in warm climates.

It arises sometimes at the beginning of a fever, as other internal inflammations. In this case it is preceded by the symptoms of the first stage, and the fever for the most part continues.

The

The inflammation begins with an obtuse pain in the region of the liver, which is often but just sensible. This pain gradually increases, but is never very acute, if the membranes are not affected ; nor is it accompanied by any great degree of general inflammation. The pulse, therefore, at the beginning is not at all altered, when the patient is free from fever ; and frequently but very little till the time of suppuration. The swelling when large, or when the convex part is affected, is visible externally, and occasions a difficulty of breathing, with a cough, but seldom any considerable spitting : when the concave part is inflamed, if near the stomach, it brings on sickness, thirst, hiccup, vomiting ; or if near any considerable hepatic duct, or the *ductus communis choledochus*, it prevents the passage of the bile into the *duodenum*, and a jaundice takes place. But in all other cases of inflammation of the liver, the quantity of bile thrown into the *duodenum* is increased, and the evacuations become bilious:

Symptoms  
and Progress.



Terminations.

All the terminations of inflammation may possibly happen in this distemper; but by much the most common is suppuration, which is attended by the ordinary signs of internal ones, together with a fluctuation, which is sometimes to be felt when any part of the liver, immediately under the teguments, is affected; the preceding symptoms of the disease at the same time diminish, or go off entirely.

When the abscess is considerable, a sufficient quantity of matter is absorbed to produce a hectic fever.

The *pus* opens to itself a way (1) into the intestines, by destroying the coats of an hepatic-duct, or a part of the *duodenum*, or (2) into the cavity of the belly, or (3), if the liver adheres to the *peritonæum*, through the integuments of the *abdomen*.

(1) In the first case, several purulent, orichorous stools are immediately brought

brought on, and the matter afterwards continues to come away with the *fæces*. Terminations.

(2) In the second, the sense of weight, and the swelling (if any there were) diminish, or go entirely off; the intestines are ulcerated; pains in the belly, and dropfical symptoms come on, and, together with the hectic fever, kill the patient. When the *pus* is contained in the *abdomen*, it sometimes, although very seldom, gets through the external integuments, particularly at the rings of the muscles.

(3) In the last case there is an ulcer opening externally.

In whatever way the *pus* is evacuated, unless the patient is assisted by medicine, a hectic fever is generally produced, and he dies.

Sometimes after inflammations of the liver, on opening the body, collections of water, without any appearance of *pus*,

have been found between the substance and external membrane.

Distinctions.

It should be distinguished from inflammation of the *pleura*, diaphragm, muscles of the *abdomen*, and spasmodic pain.

Cure.

The cure is performed by bleeding, blisters, relaxants, &c. as in other internal inflammations; but the symptoms at the beginning not alarming the patient, it is often too late before the remedies are employed; and from the slowness of the general inflammation, evacuations having less effect, this disease frequently terminates in suppuration, which, however, is to be avoided, if possible.

For this purpose we are to bleed to twelve or fourteen ounces any time before the fifth day; especially if there be general inflammation: and the bleeding is to be repeated, if the general inflammation continues, or the patient is relieved but not cured.

If



If there be a free passage for the bile Cure.  
into the *duodenum*, purgatives are also  
to be given. (Vid. No. 21.)

In other cases relaxants (Vid. No. 13.  
4.) and blisters applied to the part, are  
principally to be depended on, and in  
all are useful.

If it be too late for the application  
of these remedies, or if they fail, and  
a suppuration takes place ; as soon as  
we know this from the symptoms  
(No. 11.) is to be taken four or five  
times a day, increasing the quantity of  
the bark, so that the patient shall take  
from three drachms to half an ounce  
every 24 hours.

If the abscess points externally, we  
are to open it as soon as possible ; pro-  
vided it appears from the immobility of  
the swelling that the liver adheres to  
the *peritonæum* ; and the dose of the  
bark is to be increased to  $\mathfrak{z}\text{i}$  ad  $\mathfrak{z}\text{ij}$ ,  
every 24 hours, 'till a good suppuration  
and granulation comes on. The medi-

Cure.

cine is to be used in the same manner, if from the purulent or ichorous stools we judge that the abscess has broke into the *duodenum*.

Mercury has been given with the same intention, in as great quantity as could be taken without salivating the patient; but the bark appears to me to be preferable, especially if the case be recent.

When an abscess breaks into the cavity of the *abdomen*, the same Means may be used, but the disease is commonly fatal.

### The Inflammation of the MEMBRANES of the LIVER.

IT arises from the same causes as inflammation of the substance, but the symptoms differ as follows; the pain is more acute, it is attended with general inflammation, resembles more a pleurisy of the right side when the convex part is affected,

affected, and is to be treated nearly in the same manner as that disease.

### The Inflammation of the CELLULAR MEMBRANE lying under the PSOAS MUSCLE.

**I**T is produced by the common causes Causes.  
of internal inflammation, and also  
by strains and bruises.

It agrees very much, excepting for Symptoms  
and progress.  
the situation, in its symptoms, progress,  
and termination, with the inflammation  
of the liver: *i. e.* the pain is situated in  
the back, for the most part rather lower  
than the region of the kidneys: both it,  
and the other symptoms of the inflam-  
mation are slight, and seldom attended  
with a great degree of general inflamma-  
tion: the disease commonly terminates  
in suppuration, notwithstanding which,  
the pain sometimes continues, falling  
gradually lower: in other respects the  
usual symptoms of internal suppuration  
S 4 arise,



Symptoms  
and progress.

arise, such as irregular coldness, hectic fever, &c.

The *pus* makes its way through the *cellular membrane*, sometimes into the cavity of the *abdomen*, when it is fatal, (vid. inflammation of the liver) sometimes externally in the thigh, a little on the outside of the lymphatic glands in the groin ; sometimes it appears in the loins ; or dissects along the attachments of the abdominal muscles to the spine of the *ileum*, and forms a *tumor*, with fluctuation in the hip ; or it passes down into the *pelvis*, and gets to the *perinæum*, or resembles the *hæmorrhoides* ; often producing *caries* in the bones of these different parts, and pain on moving, or inability of motion in the muscles.

When the tumor and fluctuation appear, the matter may be commonly forced back by pressure ; and when the abscess is opened, a large quantity of it runs out ; it is likewise afterwards pressed

fed out by moving the muscles of the parts affected.

It should be distinguished from inflammation and stone in the kidneys or *ureters*, *buboes*, *hæmorrhoides*, and inflammation and suppuration of those parts where the *pus* in this disease makes its appearance externally. Distinctions.

It is to be treated in the same manner as inflammation of the liver, (except for the situation), both in the state of inflammation and suppuration. Cure.

The

The Inflammation of the SUB-  
STANCE and external COAT of  
the KIDNEY.

THIS disease is not common, as a determination of fluids to the kidneys, occasions an increased secretion of urine, sometimes mixed with blood, which prevents the inflammation.

*Causes.*

It arises from the common causes of internal inflammations, or from external injury.

A stone in the kidney produces inflammation, but most commonly of the internal membrane and *tubuli uriniferi*.

*Symptoms  
and progress.*

The inflammation begins with a pain in the region of the kidney, (*i. e.* in the back, near the articulation of the short ribs, higher up on the left side than on the right) often shooting down by the *ureter* to the bladder, and by the spermatic



matic chord to the testicle. The urine is pale, its evacuation frequent, and in small quantities at a time, performed with difficulty, and with a sense of heat and pain : there is sometimes external redness. The leg of the side affected is seized with *stupor* ; and the pain is increased upon standing, walking, coughing, lying on the opposite side, or in any other case where the kidney is moved, or the surrounding parts extended. The pulse is hard and frequent, and as the pain increases, often becomes small, quick, and sometimes intermittent, with coldness of the extremities, cold sweats, sickness, vomiting, fainting, *delirium*, convulsions, &c. as in the inflammation of the intestines, although not in so great a degree, not arising so soon in the disease.

Symptoms  
and progress.

It admits of a natural cure, *viz.* the urine grows high coloured, is secreted in greater quantity, and at last is copious, thick, and mixed with mucus, relieving, and gradually diminishing the pain

Symptoms  
and Progress.

pain and other symptoms, till the patient's health is restored.

It may also go off by *metastasis*, &c. as other internal inflammations : or it may terminate in gangrene and mortification, which, in the interior parts of the body, are almost constantly fatal, and nearly with the same symptoms, (vide the pleurisy.) In this case there is likewise an alteration of the colour of the urine, accompanied with *fætor* ; or the inflammation may go off, and leave a *scirrhus*, which is known from the patient's being relieved, although the natural cure has not taken place, nor any symptom of suppuration appeared ; from a sensible hardness sometimes continuing in the part ; a *stupor* in the lower extremities on the side affected ; and a diminution of the secretion of urine.

Or the kidney may suppurate, which is indicated by the common symptoms of internal suppuration.

The

The abscess breaks (1) into the *pel-* Symptoms  
*vis*; (2) into the cavity of the *abdo-* and Progress.  
*men*; (3) or lastly externally.

(1) In the first case, the sense of weight, and distension of the kidney (if any there were) goes off suddenly, and, at the same time, the urine is mixed with *pus*, which subsides to the bottom in a great quantity upon the breaking of the abscess, but afterwards in less.

If the matter is white, thick, and not foetid, the ulcer sometimes heals; otherwise a hectic fever comes on, and the patient is cut off: or lastly, the ulcer may continue a long time without proving fatal.

The ulcer generally heals soon, or not at all.

(2) If it break into the cavity of the *abdomen*, it kills. (Vide the Inflammation of the Liver.)

(3) If



(3) If it open externally, the urine comes away with the *pus*, and an ulcer is formed of very difficult cure.

Distinctions.

Inflammation of the kidney should be distinguished from a stone obstructing the ureter, from inflammation of the *Psoas Muscle*, and other adjacent parts, and from inflammation and spasmodic, or other pains in the intestines.

Cure.

The cure is to be performed by the medicines commonly used in internal inflammations; to which may be added the following.

(1) Gentle diuretics.

(No. 32.) R Sem. Lin. ʒfs  
 Sem. Petrofel. ʒfs  
 Aq. Font. Bullient. ℥j.  
 Infundantur simul per  
 Hor. fs. et cola.  
 Collatur. adde.  
 Succ. Limonum et Sach.  
 Alb. q. f. ad gratam  
 Acedinem Dulcedi-  
 nemque

nemque. Bibat Potum  
culum frequenter.

A moderately warm *femicupium* may also be used to promote the secretion of urine.

(2) Mild laxatives and glysters. (Vid No. 8, 9.)

(3) If there should be any external symptoms, fomentations and poultices may be used. (Vide No. 23.)

Lying on the back, as it prevents the passage of the urine into the bladder, is to be avoided.

If the kidney should suppurate, the treatment is to be nearly the same as in suppurations of the liver, (vid. Inflammation of the Liver.) And the patient is also to take infusion of linseed, or decoction of althæa root for his common drink, after the abscess is broke, in order to dilute the urine, and prevent it from stimulating the surface of the ulcer, which would hinder the cure.

Some

Some have proposed the exhibition of the balsams of trees, to promote the granulation ; but the bark appears to me to be preferable.

The management of the food, &c. in these suppurations, is to be the same as in the pulmonary consumption.

### The Inflammation of the BLADDER.

**T**HE inflammation of the exterior coats of the bladder differs from the abrasion, exulceration, or inflammation of the internal, or mucous membrane.

#### Causes.

It is produced by the causes of internal inflammation ; by the rubbing, or pressure of a stone ; external hurts ; and by strictures in the urethra.

The neck of the bladder is thicker than any other part, and more exposed to injury from the stone and bruises.

The stone in the bladder more commonly produces an inflammation, or abrasion



abrasion of the mucous membrane than this disease.

The inflammation begins with a violent pain in the region of the bladder, *i. e.* in the *perinæum*, or in the belly, immediately above the *pubes*, deep seated, and sometimes attended by a redness in these parts. If the neck be the part affected there is a retention of urine, together with a constant *stimulus* to its evacuation; if the bottom be the part diseased, there is a continual dribbling, with great efforts to throw out a larger quantity at a time, which the patient conceives to be contained in the bladder. These symptoms are accompanied with frequent attempts to expel the *fæces*, with which the *rectum* appears to the patient to be always loaded; these increase the pain very much, particularly when any *fæces* are actually contained, and especially if they are hard. The pulse is frequent and hard, the extremities become cold, there is immense anxiety and restlessness, with sickness, vomiting, delirium, and the other symptoms of

T                      irritation,

Symptoms  
and progress.

irritation, as in the inflammation of the intestines, and the patient for the most part is cut off in a short time.

It also frequently terminates in gangrene and mortification; the pain goes off, but the other symptoms continue, and the patient dies soon after.

Or it may be carried off by an increased secretion of *mucus* from the internal membrane, gradually relieving the symptoms; or by a *metastasis*.

Or if the disease should not be so violent, especially when the neck of the bladder is the part affected, it may proceed to suppuration, most of the symptoms going off; uncertain rigors and coldness taking place; and a difficulty in making water, or a total retention of it, with a constant irritation to its evacuation, or a *tenesmus*, with a sense of weight, (as the abscess occupies the neck or *fundus*) remaining till the *pus* is evacuated.

The



The matter may make its way into the bladder, and come away with the urine, leaving an ulcer there: or into the cellular membrane, and from thence externally by the *perinæum*, after destroying the circumjacent parts in its passage, and producing a *sinous* ulcer; or it may get through the *peritonæum* into the *abdomen*, when it generally brings on fatal symptoms. The ulcers in the bladder and *perinæum*, are of difficult cure.

It should be distinguished from inflammations of the circumjacent parts, and from retention of urine produced by other causes. Distinctions.

It is to be cured by the common means of *Resolution* in internal inflammations; as bleeding, relaxants, &c. Cure.

These are to be employed immediately on the appearance of the disease, and prosecuted with vigor, or it will soon be fatal. There should be added gentle laxatives, or glysters to keep the belly



Cure.

open, especially the first ; as glysters by pressing on the bladder, when a part near the *rectum* is inflamed, may be detrimental, and should therefore only be used when there are indurated *fæces*.

(No. 9.) but in smaller quantity, is proper in this case ; otherwise (No. 8.) may be exhibited twice a day, or oftener, as there may be occasion.

If there should be external symptoms, fomentations and poultices are to be applied ; taking care that they do no hurt by their pressure, and that the cloths or herbs be not too moist, lest the water should run upon the linen and bed cloaths.

(No. 33.) R Flor. Cham. Manip. ij.  
Folior Rut. vel. Matri-  
car. Manip. j.

Capit. Papaver. Alb. sem.  
dempt. ʒj.

Rad. Alth. recent. ʒj.

Optime contundantur et  
coquantur in Aq. Font.

q. s.

q. f. per Minut. v. De- Cure.  
cocto utatur pro fotu  
et Herb. Coct. pro ca-  
taplafmate, addend. un-  
guent. simpl. ℥ij.

R Capit. Papav. Alb.

sem. dempt. ℥iv.  
coque ex Aq; Font. lb. iij  
perdecem minut. dein adde  
Spt. Vin. rect. lb. fs. expe-  
rimendo cola presolu.

If there should be no external symp-  
toms, the skin of the belly, and *peri-  
næum*, is to be rubbed with (No. 22.)  
which is preferable to blisters, on ac-  
count of the inconvenience of their ap-  
plication.

The drink should be mucilaginous de-  
coctions; and, if the urine be retained  
from a stricture in the neck of the blad-  
der, only in small quantities.

In this case too, it is necessary to eva-  
cuate the urine by art, to avoid gangrene

Cure.

and mortification; but this should be done with great caution.

If notwithstanding the use of these remedies, and after sufficient evacuation, a spasmodic contraction, and pain should continue; opiates, as in inflammations of the intestines, may sometimes be useful.

If the bladder suppurate, the *pus* is to be evacuated as soon as possible, and the remedies already recommended in ulcers of the kidneys, are to be employed.

The



## The Inflammation of the WOMB.

**I**T arises from the common causes of Causes.  
internal inflammations, tearing, bruises, external *stimuli*, and obstructions of the *menstrua*, or *lochia*.

It happens frequently after abortions, and child-birth, especially when the *lochia* are prevented from coming on, or are stopt by cold, or any other cause; and is then attended with symptoms different from those which appear when an *uterus*, not lately impregnated, is inflamed, and either alone or mixed with inflammation of the peritoneum or that disease happening after child birth-has been called puerperal fever.

In this case, there is a pain at the bottom of the belly, more distended, and for the most part, neither throbbing, nor constantly very acute; the pulse is frequent, especially after child-birth, often small, sometimes irregular, and in strong habits, and after early abortions,

Symptoms  
and progress.

T 4

hard;

Symptoms  
and progress.

hard ; the patient is affected with *delirium*, *subsultus tendinum*, and the other symptoms of irritation which prove fatal ; or the womb gangrenes, and mortifies, and the patient sinks. When the womb has not been lately impregnated, the pain is more constant, bounded, and throbbing, the pulse hard, full, and strong, with the other symptoms of general inflammation ; or, if the disease rises to a greater height, it is small, and very frequent, with the other symptoms of irritation ; suppuration is also more liable to happen. In both cases, as different parts of the womb are affected, there is strangury ; or suppression of urine ; or *tenesmus*, and pain in going to stool ; or pain in moving the lower extremities ; or swelling and heat, which may be felt upon introducing the finger into the *vagina* the *os tincæ* being shut : universal restlessness, thick urine, and pain from external pressure, take place ; and, if it should happen in an impregnated *uterus*, an abortion follows.

It

It may be naturally cured by the *menstrua*, or *lochia*, breaking out plentifully ; or after child-birth, or abortion, by the patient's falling into a constant, equal, gentle, long-continued sweat. Or it may terminate in gangrene and mortification, with the usual symptoms of internal ones, and kill.

Or it may suppurate, with the common symptoms, and the abscess formed, may break into the cavity of the *uterus*, bladder, or *rectum*, or externally, by the *perinæum*, or into the cavity of the *abdomen*.

In this last case it is fatal, and in the others, leaves ulcers difficult of cure.

Or it may be cured by *metastasis*.

Or it may leave a *scirrhus* behind.

Inflammation of the womb [in delicate, or weak women, after child-birth, where there is no hardness, but great frequency of the pulse, is for the most part

Cure.



Cure.

part fatal. The only remedies we can employ in this case, are the keeping the patient in bed, moderately warm, exciting if possible a gentle, constant sweat, by *farinaceous* decoctions in small quantities at a time, but frequently repeated; and applying antispasmodic fomentations, and poultices, as (No. 33.) to the lower region of the belly, and external parts of generation. Bleeding increases the weakness without diminishing the inflammation; relaxants produce great sweating or purging, without relief; and all very considerable evacuations are hurtful. The belly not having hitherto been rubbed with stimulants and antispasmodics, it is worth while to try them, and (No. 22.) may be used: but blisters, besides the inconveniency of their application, are apt to render the pulse more frequent. In abortions, and labours, where the patient has not been so much weakened, when the pulse is hard and not very frequent, it is useful to take away blood, but this evacuation cannot in general be often repeated with advantage;

advantage ; and therefore the cure is af- Cure.  
terwards to be committed to relaxants  
(No. 4.) and antispasmodic fomenta-  
tions and poultices (No. 33.) taking care  
that the first produce no purging, and  
keeping the patient in bed, moderately  
warm. When the *lochia* have stopped,  
stimulating *emenagogues* have sometimes  
been used, in many cases, with mani-  
fest disadvantage, and seldom with good  
effect.

If the pain continues in these cases,  
notwithstanding the above treatment,  
opiates may sometimes be given with  
success, as in inflammations of the in-  
testines.

When the inflammation attacks a  
womb not lately impregnated, the com-  
mon remedies used in internal inflam-  
mations are to be employed, according  
as the disease is attended with general in-  
flammation, or the symptoms of irri-  
tation.

We are always to guard against pres-  
sure on the part affected, whether that  
pressure



pressure be external, or arise from urine contained in the bladder, or from *fæces* in the *rectum* : in the second of these cases this may be done by the catheter ; and in the third by glysters, which after labours, where the patient is weak, should consist almost solely of watery fluids.

The food, when the patient is much reduced after labour, must be animal broths ; otherwise *farinaceous* decoctions.

If the *uterus* should suppurate, we are to endeavour to procure an exit to the *pus* as soon as possible ; which however can hardly be done, except when it points in the *perinæum*, where poultices of bread, milk and oil, are in this case to be applied ; and as soon as any fluctuation is felt, the abscess is to be opened.

N. B. *Inflammations also sometimes arise in the other abdominal viscera ; but being attended with symptoms similar to those already treated of, excepting for the situation, requiring a similar treatment, and happening but seldom, they are not here enumerated.*



T H E

I N F L A M M A T I O N S.

O F T H E

M U C O U S M E M B R A N E.



## The CATARRH.

**I**T is an inflammation of, or greater secretion from, the mucous membrane of the nose, eyes, throat, mouth, or lungs, and properly should be divided into different diseases.

It arises generally from cold, sometimes from the passions of the mind, perhaps also from *stimuli*. Causes.

The effects of cold, according to its different application, are various; *viz.* The effects of cold on the body.

When the skin is exposed to it gradually, and not to such a degree as to kill by its sedative power, it produces a contraction of the external vessels, an increase of the internal circulation and secretions, and checks the cutaneous perspiration, but for the most part no disease ensues; on the contrary, it gives greater strength to the whole habit: sometimes however scaly eruptions take place  
on



The effects of  
cold on the  
body.

on the skin ; troublesome ulcers in the extremities, difficulty of breathing with cough, and a great secretion of mucus in the lungs, where they have been weakened by frequent, or long catarrhs, especially where the chest is narrow ; and in very irritable parts (as the skin in children) erysipelatous inflammations ensue.

When the change from heat to cold is sudden, it is often followed by rheumatisms, catarrhs, diarrhæas, and dysenteries ; inflammations, particularly internal ones, fevers, &c. and frequently such changes are attended with no bad consequences.

Cold has sometimes these effects, when applied for a few minutes ; at other times it fails, unless it be continued longer.

The danger is often as great, and sometimes even greater, when a part only of the body is cooled.

It

It is not the absolute, but relative degree of cold, that brings on these diseases ; for whatever the present heat be, a sudden diminution is dangerous, and more so when the thermometer is high ; and, *cæteris paribus*, the greater the change, the greater the effect.

The effects of cold on the body.

More people are affected by it in the spring, and autumn, than in winter, or summer, on account of the great difference, at these seasons, of the temperature of the air, in the day and night, in places exposed to the sun, or in the shade, and in substances more or less compacted.

Cold may be communicated by the air, or by any solid, or fluid matter, or it may be generated on the surface of the body ; but it does not act in all cases with equal power.

The more readily any substance communicates its heat, the greater are its  
U effects,

The effects of  
cold on the  
body

effects, and *e contrario*. Hence cold metals, stones, and moist cloaths, especially of a firm texture, &c. are dangerous.

The vapours surrounding the body, defend it from the external atmosphere. Hence cold air in streams, does more mischief, than when at rest.

Cold is generated,

(1) By evaporation. Hence moisture on the skin, and cloaths, is extremely hurtful, and especially when the water is pure; as some substances united with it, neutral salts, for example, in sea-water, diminish its volatility, and consequently its bad effects; whilst others, as essential oils, stimulate and counter-act it.

(2) By the solution of water in air. Hence winds that have passed over large continents, or high hills, having but little water chemically combined, readily



dily dissolve the matter of the insensible perspiration, and any moisture that may be on the skin, and are apt to produce diseases; neither are people thoroughly defended from this air in houses, especially those who have been much affected with rheumatic pains. Hence also, if water be mechanically mixed with air (which in this case is commonly said to be moist), the heat of the body makes a solution take place immediately upon its surface, which again generates cold, and keeps down the heat or the vapors immediately surrounding the skin: an atmosphere therefore containing it in this state is likewise dangerous.

The effects of cold on the body.

Air chemically dry, blown over any moist place, dissolves the water, and becomes cold. Hence the east wind here, and similar ones in other countries, are by much the coldest.

Air, into which water has just evaporated (as, for example, in a chamber of which the floor or walls are moist) is cooled both by the solution and evaporation of the water, and also

The effects of  
cold on the  
body.

by the solution of it on the surface of the body ; and is from these circumstances extremely apt to bring on a disease.

An equal exposure to cold affects some persons much more than others ; and the same man at one time more than at another.

Those of more irritable habits are more subject to be injured by it. Hence if any one has been surrounded by warm bodies for a considerable time, as in hot climates, or in the summer, especially when it is long, or if he has been warm in bed, or covered every where with cloaths, &c. diseases, and those of the worst kinds, as fevers and dysentery, are very apt to rise, even from slight applications of cold.

If the circulation be greatly increased in the external parts, and the cause of this increase has ceased, and cold be applied, it is seldom that a man escapes ; and if a cold fluid, especially without  
*stimulus,*



*Stimulus*, be taken into the stomach, it has the same effect, as if it were applied to the skin. Hence drinking cold water after being heated with exercise, and then continuing at rest, or bathing under the same circumstances, or any other like exposure to cold, or going from a room heated to a great degree, into the open air, &c. is extremely dangerous.

The effects of cold on the body.

If a man has been in a very hot atmosphere and comes suddenly into the cold, or if from a moderate heat he exposes himself to a very cold medium, it is seldom that any mischief ensues.

A man runs a great risk of catching cold, when the powers of circulation are weak; as after evacuations, when the stomach is empty, when he has been fatigued with exercise or attention of the mind, when the strength has been reduced by disease, &c.

Those unaccustomed to changes in the temperature of the air, and those in whom cold hath already produced diseases, are more liable to be affected.



The effects of cold on the body.

Exposure of a part of the body unaccustomed to cold, is very apt to do hurt.

Coldness acts more powerfully when joined with anxiety, fear, and the other passions of the mind, in which the force of the circulation is diminished, or the external vessels contracted; and also with putrid vapour, or air partly unfit for respiration.

Cold contracts the external vessels, throws a greater quantity of blood on the internal, and obstructs the cuticular perspiration; but its effects are not in proportion to the contraction, or obstruction, but to the quickness of the change of the circulation, the irritability of the habit, and universality, firmness, and continuance of the contraction.

We may prevent it from having any bad effect, by avoiding or counteracting it.

It may be avoided by covering the body with cloaths of a loose texture, as flannels,

flannels, callicoes; &c. and wearing them next the skin, where there is great danger: and by taking care not to expose it, in those circumstances, where cold is most liable to affect it.

It may be counteracted.

(1) By increasing the force of the circulation by stimulants, as wine, &c. or exercise. Hence, when a man is actuated by any of those passions which increase the circulation, as courage, enthusiasm, &c. any degree of cold almost can be borne without detriment.

(2) By strengthening the system.

(3) By diminishing the irritability by opium, bark, living in a colder atmosphere, &c.

(4) By gradually accustoming the body to bear changes from heat to cold, which ought never to be such as will bring on any disease.

CATARRHS are apter to arise from cold, in the spring and winter, in variable

Predisponent  
causes of the  
catarrh.



able and cold climates, and in variable weather ; and they happen more readily to people who have narrow chests, or long necks, or such as have formerly been affected with them, especially if tubercles are left in the lungs ; or to those of lax habits, or whose parents were subject to this disease.

Symptoms  
and Progress.

Sometimes the inflammatory symptoms precede the increased secretion ; in which case it has been called a *hot catarrh*. Sometimes the secretion of the *mucus* is increased at the beginning, the inflammation coming on afterwards, but seldom in so great a degree ; when it is said to be a *cold catarrh*.

In the first case the symptoms, according as the different parts are affected, are

A redness, heat, soreness, and sense of distention in the eyes and eye-lids, there being at the same time a great secretion of tears, and of watery *mucus*, containing neutral salts, which running  
down



down the cheeks sometimes stimulate and inflame them. When the nose is affected, there is a sense of stuffing and swelling in the nostrils; an alteration in the voice, and a loss of smell; and if the inflammation runs high, a thin *mucus* is secreted which produces heat, foreness in the nostrils, sneezing, and sometimes inflammation with excoriation of the upper lip; or falling backwards into the throat, *trachea*, or lungs it inflames them. These symptoms are now and then attended by a swelling of the nose, or of the whole face, with a degree of languor and stupor, and a deafness, foreness of the ears, and running from them. When the throat is the part diseased, the tonsils, and other parts are red, sore, and hot, accompanied with a secretion of watery mucus which stimulates, and occasions a constant, troublesome, tickling cough; sometimes the whole mouth is sore; there are little excoriations of the tongue, and a constant flow of saliva, with foreness of the salivary glands, and the lips are inflamed  
and

Symptoms  
and progress.

Symptoms  
and progress.

and excoriated. When the *larynx* or *trachea* are affected, a soreness is felt in them, attended with hoarseness, and for the most part with a troublesome, tickling cough. In the lungs, this disease produces a soreness, tightness, and sense of stuffing in the breast, with difficulty of breathing, and violent cough, with which either nothing, or only a watery mucus is at first spit up, and which produces soreness under the *sternum*, and in the sides, and sometimes head-ach, sickness, and reaching.

Sometimes all these parts are affected at once, but frequently one only at first, the disease spreading from thence to the others.

It is attended with more or less of general inflammation, according to the strength of the patient, or violence of the disease; the natural evening *paroxysm* of fever is also increased, and with it all the symptoms; and this, together with the cough, often deprives the patient of sleep, especially in the fore-part of the night,



night, going off in the morning with a gentle moisture on the skin.

Symptoms  
and progress.

In weak or scorbutic habits (as they have been called) the pulse becomes frequent, but not often hard; the appetite is lost; and there is great increase of the evening *paroxysm* of fever.

Sometimes the disease is preceded by, or accompanied with, a fever.

In the cold *catarrh*, the secretion of the *mucus* comes on first; there is therefore a running from the nose; but the matter is not watery; but viscid, tho' thin, and not very stimulating; or the same kind of *mucus* in the throat, produces a cough, by which it is thrown off, and sometimes *nausea*; or in the lungs a cough with spitting, (which is much more considerable after sleeping) but no great soreness, or sense of stuffing. These are followed in a day or two by the inflammatory symptoms, but not in a great degree; nor is the whole system often much affected.

There



Symptoms  
and progress.

There are in this disease all the varieties imaginable, from the most partial, to the most universal, from the slightest to the most violent, from the most inflammatory to the least inflammatory, from the whole system being not at all to its being very much affected, according to the cause producing the distemper, or the habit of the patient.

The symptoms already enumerated, are followed by a secretion of *mucus* in greater quantity, becoming viscid, if it was not so at the beginning, and losing its *stimulus* ; and if the inflammation be great, sometimes growing white or yellow, and being now and then tinged with blood ; as this goes on, the other symptoms gradually abate, the secretion diminishing, and the *mucus* returning to its natural colour and consistence, till the disease is cured.

When the patient is in a cold atmosphere, the cough is for the most part more troublesome ; the other symptoms are also prevented from being carried off, and the disease is prolonged ; and if he is suddenly

suddenly exposed, a fresh exacerbation ensues, and it runs through the same course: by either of these it may be continued during the winter, and going off in the summer, recur upon the return of the cold weather, and from the slightest cause become habitual; and now and then the secretion is so considerable, that it weakens the patient to a great degree, and sometimes kills.

Symptoms  
and progress.

If the inflammation be great, it sometimes runs deeper than the mucous membrane, and *angina* or *peripneumony* come on; and if there be *inflammatory diathesis*, and the cough be very violent, a pleurisy may be produced.

Or an *hemoptoe* may arise.

Or an excoriation and exulceration of the lungs; and of consequence, pulmonary consumption may take place, especially where there are tubercles.

Or there may be all the appearances of the mucus being converted into pus and producing



producing an exulceration, the matter spit up perfectly resembling pus, and the patient dying hectic.

Or it may be cured by *metastasis*, especially by eruptions about the mouth.

It is much apter to terminate ill, in those naturally disposed to be affected, and when cured it often leaves adhesions of the lungs to the *pleura* or *tubercles*.

Distinctions.

It is to be distinguished from *angina*, *peripneumony*, the irrisipelatous or ulcerous sore throat, venereal, and other exulcerations in the throat, pulmonary consumption, hooping cough, *asthma*, and other difficulties of breathing, and inflammation of the mucous membrane preceding or accompanying the small-pox or measles.

Cure.

The cure is performed,

1st, By weakening the system, by evacuation according to the general inflammation, or the strength of the patient.

If



If therefore there should be considerable *inflammatory diathesis*, and especially if the breast be the part affected, we are to bleed from  $\text{z xii}$  to  $\text{xvi}$ , and repeat the operation if the hardness of the pulse, &c. continue; but if the inflammatory symptoms be not great, and do not affect the whole habit, it is unnecessary; and when the patient is weak, and the secretion, thin, and in great quantity, it is even sometimes hurtful.

Purging also diminishes the inflammation, and may be likewise used when the secretion is too great.

(No. 34.) R Tamarind  $\text{z iij}$ .

coque in Aq. Font.  $\text{z vj}$   
per v Minut.

colatur. adde

Sal Cathart. Glaub.  $\text{z vj}$   
ad x.

Vel. Polychrest. Rupell.  $\text{z iiii}$   
ad vj.

Mann. ———  $\text{z fs.}$

T<sup>ræ</sup> Sen ———  $\text{z iij}$

Fr.

Cure.

Ft. Potio Purgans Cap<sup>t</sup>. mane ij v-  
cibus, intervallo Horæ fs.

When the *Inflammatory Diathesis* is not very considerable, or where it has been diminished by bleeding, after the purgative in the evening an opiate may be used.

(No. 35.) R Aq. Cinnam. Ten. ʒjfs.  
Aq. Cinnam. Spir. ʒiij.  
Syr. Diacod. — ʒfs ad ʒj.  
Tart. Emet. gr.— $\frac{1}{3}$  ad gr. fs  
Ft. Haust. Cap<sup>t</sup>. H. S.

If the inflammatory symptoms should continue, or the secretion be still too great, the purgative, and when proper, the opiate, may be repeated after a day's interval.

2dly, By taking off the inflammation when it occupies the breast, especially if there be any acute pain, by means of blisters applied as near to the part principally affected as possible ; or when the throat is sore, or there is hoarseness, by using (No. 22.)

3dly,

3dly, By promoting the secretion, Cure.  
where it is not sufficient. (Vid. the *Perripneumony* and *Angina*.)

4thly, By giving mucilaginous medicines to cover the mucous membrane, and allay the cough.

(No. 36.) R Sem. Lin.  $\mathfrak{z}$  ss.

Aq. Font. Bull.  $\mathfrak{z}$  iv.

Infund. simul per Hor.  
dein adde

Aq. Font. Bull.  $\mathfrak{z}$  xx.

Syr. Limon. —  $\mathfrak{z}$  ij.

Colaturæ bibat. cyath. calid. frequenter.

(No. 37.) R Aq. Puleg.  $\mathfrak{z}$  jss.

Sperm. Cœt.  $\mathfrak{z}$  ss.

Vitell. Ov. q. f.

Syr. Peçt  $\mathfrak{z}$  iij.

Ft. Haust. iv<sup>ta</sup> quâque horâ fumend.

Or (No. 25, 30.) may be used.

When the complaint is slight, these mucilaginous medicines are often sufficient for the cure.

5thly, By restoring the circulation to the skin by relaxants (No. 4, 13.) which are useful in all cases; and where the



Cure.

inflammatory symptoms are much diminished, or have not come on, opiates are added to them with advantage.

(No. 38.) R Extract. Thebaic. gr. iij.

Extr. Gent. gr. x.

Tart. Emet. gr. ij

Ft. Pil. viij. Capt. unam ter indies.

When the inflammation is great, the patient should be confined to vegetable farinaceous food, and the drink should be mucilaginous warm infusions, or decoctions, acidulated; and he ought to be confined to a room moderately warm: but in slighter cases this is not necessary.

Nothing contributes more to the cure, than avoiding exposure to cold, especially in those circumstances where it has the greatest effects on the system; and this precaution is particularly necessary in those naturally liable to the disease, or where it hath continued long, or when there have been frequent relapses.

If it be drawn out to a great length, and the secretion hath weakened the patient,

patient, strengthening remedies are to be employed; and riding on horseback, in a pure, dry air, is frequently of service; but these are only to be practised when there is little or no inflammation. Resinous pectoral medicines have sometimes been given here also with success.

(No. 38\*.) R Gum Myrrh. Pulv. ʒj.  
Ft Pulvis ter die sumendus.

## T H E

## ERYSIPELATOUS SORE THROAT,

## O R,

SORE THROAT attended with ULCERS.

IT is more common in the latter part of the autumn, than at any other time of the year, and frequently attacks children, and people of lax habits.

Predisponent  
causes.

It is often, but not always, produced by exposure to infectious vapour: when it is not, it most probably arises from cold, in habits predisposed to the disease.

Causes.

It begins sometimes with *rigor*, and *horror*, and coldness; but these symptoms,

Symptoms  
and progress



Symptoms  
and progress.

toms, as well as those affecting the whole system, during the progress of it, seem rather to arise from irritation, than from a regular fever. The symptoms of inflammation in the throat, are at first a fiery redness, sometimes without much swelling, sometimes with a pretty considerable, but puffy one, which does not prevent the swallowing, or the breathing in any great degree, and is attended with a stiffness of the neck. This is soon followed by whitish sloughs, not rising above the surface of the membrane, and for the most part surrounded by a redness, which, according to the disease, is in all the degrees, from a very florid colour to almost a black; the sloughs change gradually to an ash colour, and sometimes to a blackish one, giving an offensive smell to the breath, spreading and running deeper till the patient is cut off. In this case, the parts on dissection have rather the appearance of rottenness than of an animal putrid mass; or the sloughs fall off, leaving ulcers, which either fill up, and skin over, or are covered with fresh ones; sometimes also



also the patient recovers without any sensible separation. Symptoms  
and progress.

At the same time, if the disease be violent, the mucous membrane of the other parts of the body is affected, and sickness, vomiting, and sometimes purging, come on at the beginning; these generally leave the patient in about 24 hours; but if they continue; they add very much to the danger: the eyes are also red and watery, the membrane of the nostrils is inflamed, a watery stimulating fluid runs from it, and sometimes hæmorrhages ensue, which are often fatal if they arise the third or fourth day, or afterwards: there are also instances of the *vagina's* being inflamed, and ulcerated, and of the *menstrua* coming on, although it be not their usual period. After a day or two, the skin of the extremities, and of the throat externally, is often affected with erysipelatous inflammation, and little eruptions take place, relieving the sickness, purging, and other symptoms, arising

Symptoms  
and progress.

from the mucous membrane of the intestines being diseased.

These are accompanied by symptoms of irritation, in a greater or less degree according to the disease. When severe, it mostly begins with *rigor* and *horror*, coldness followed by heat, frequency of the pulse, restlessness, anxiety, heaviness of the head, and pain in the forehead. To these succeed the symptoms of the inflammation, most of the others continuing; the pulse seldom becomes hard, full and strong; but often excessively frequent and small; the evening paroxysm of fever is very considerable, and is often attended by *delirium*, even sometimes the first night after the attack; in the morning the patient falls into a moderate sweating and is somewhat relieved, but the symptoms in general increasing, he is, in many cases, carried off on the fourth or fifth day, a remarkable obscurity of the eyes coming on some hours before his death; otherwise the throat begins gradually to put on a better appearance, and all the symptoms diminishing, he is cured.

When

When the disease is very slight, the system is hardly affected.

It is to be distinguished from the *catarrh*, *angina*, other exulcerations, and *apht hæ*. Distinctions.

As this inflammation arises in lax and irritable habits, and is not accompanied with general inflammation, but with the symptoms of irritation; evacuations, especially by bleeding or purging, are not only useless, but detrimental. Cure.

It is also to be observed in the treatment, that the floughs, which are a species of gangrene, often appear before any medicines are applied.

At the beginning a gentle emetic may be exhibited with advantage, especially if there be vomiting and purging.

(No. 39.) R Infus. Flor. Cham.  $\bar{z}$ iv  
Tart. Emet. —gr. fs  
ad gr. j

Solution. bibat calidam, superbibendo  
Infus. Flor. Cham.



Cure.

The patient is also to be kept in bed moderately warm.

If the purging continues, it is necessary to check it by stimulants, or opiates.

The action of the vessels is to be kept up by stimulants.

(No. 40.) R Aq. Cinnam. ten. ʒjss  
 Aq. Nuc. Mosch. ʒij  
 Pulv. Contr. simpl. gr. viij  
 ad ʒj  
 Syr. Limon. — ʒiij  
 m Ft. Haust. tertiâ vel iv<sup>ta</sup> quâque  
 horâ sumend. cum pulv. (No. 6.)

But it is a more successful practice to exhibit as large a quantity of bark as the patient's stomach will bear, at least an ounce in 24 hours, and it should be exhibited in substance if possible at the interval of every hour or two hours.

Wine, as old hock, may be given along with the drink, which ought to be acidulated, if it does not produce a purging.

The

The volatile liniment may also be applied externally to the throat with good effect; and blisters have been employed with advantage. Cure.

In the mean time the throat is to be washed with acid and astringent gargles; which may also be thrown in by a syringe, when the patient cannot use them himself.

(No. 41.) R Træ Rosar. ʒviij  
 Acid. Vitriol. gutt. x.  
 Alumin. — — ʒfs  
 Træ Myrrhæ ʒj  
 m Ft. Gargarisma. Utatur sæpius.

The food may consist of the substances marked (Fevers Ind. 1st. *A. a. b. c.*)

## The CHOLERA MORBUS, DIARRHOEA and DYSENTERY.

THOSE purgings, which are attended with a degree of inflammation in the intestines, are here to be treated of. Cure.

A pur-

Causes.

A purging may be brought on by purgatives, acidity, or putrescency of the substances contained in the *primæ viæ*; too great a quantity of bile; *pus*, either from an abscess, or secreted from the blood-vessels; laxity of the glands of the intestines; general weakness; the peristaltic motion of the intestines going on too quickly; and no inflammation of the mucous membrane taking place, it may go off without any bad consequences; or weaken the patient, and cut him off, without terminating in dysentery.

Those who have been rendered weak, or irritable by a hot, or long continued summer, or by living in a warm climate, or in putrid vapour, are peculiarly liable to this disease.

It is produced by cold, or putrid vapour, or arises as a partial evacuation in fever, or from a purging from any cause, if it has either continued long, or happened in a habit predisposed; or it begins with phlegmonous inflammation of the intestines.

When



When the whole *primæ viæ* are considerably affected at the beginning, sickness, pain, flatulency, and distention of the belly come on, and are accompanied by frequent vomitings and painful purging of bile, and of all the other fluids secreted into the intestines, together with the symptoms of irritation. *viz.* a frequent and sometimes small and unequal pulse, heat, great anxiety and thirst, and after some time cold sweats, and spasmodic contractions of the extremities; the patient sinks sometimes in twenty-four hours, and it is called the *cholera morbus*.

Symptoms  
of the cholera  
morbus.

If, on the other hand, the disease be very slight, and not attended with much inflammation, there is a copious purging of all the fluids secreted into the intestines, with little pain, sickness or even loss of appetite, or alteration in the pulse; and if the patient avoid fresh exposure to the causes, these symptoms leave him in two or three days, the *fæces* acquiring their former consistence, and the evacuations becoming less frequent.

Symptoms of  
the diarrhœa.

If

Of the dysentery.

If it be in a middle degree, and does not take place as a partial evacuation in fever, it comes on with external coldness, loss of appetite, and sometimes sickness and vomiting. These are attended by flatulency, frequent, copious, thin evacuation of bile, and of all the other fluids secreted into the intestines; dryness of the tongue and thirst; a frequent, but not a hard, and full pulse; and there is generally at first but little pain. In a day or two, however, the stools begin to be less copious, become frothy, and are preceded by considerable pain, and no bilious matter or *fæces* are evacuated (excepting now and then) but they become slimy, often streaked, or mixed with blood, and fœtid; and there is the appearance of fat, and often hard masses, and sometimes concretions of coagulable lymph, resembling the internal coats of the intestines; and it appears from dissection, that the disease has left the upper part of them, and that it now occupies the *colon*, *rectum*, and the end of the *ileon*. To these symptoms are added *tenesmus*, (that is, a frequent,

quent,



quent, but fruitless attempt to evacuation) and now and then a foreboding about the *anus*, and an appearance of *pus* in the stools: there is also in some cases stranguery; and in others *apthæ*, spreading through the whole intestinal canal to the throat, especially after the disease has continued some time.

Of the dysentery.

The symptoms of irritation, together with the evacuation, sometimes weaken and cut off the patient in a week or two, and that even when they were slight at first; sometimes again, they diminish, and the disease runs out to a much greater length; swellings of the belly, dropical symptoms, and those commonly attending weakness, coming on before his death; but now and then the purging gradually goes off, and he is naturally cured.

The lower part of the *colon* and *rectum*, may also gangrene and mortify; in which case the pain is relieved, but the other symptoms continue and increase, the matter evacuated becomes blackish,



Of the dysentery.

blackish, ichorous, and exceedingly fœtid, and death soon follows.

Although the disease at first hath nearly the violence of the *cholera morbus*, it may end in a *dysentery*; which may also be brought on by purgings arising from any cause, the stools growing frothy, and the other symptoms following. In the first case it is more acute, and soon terminates fatally; in the last it often runs out to a great length, and sometimes goes off.

When a *dysentery* comes on in the spring, or in cold climates, there is often a tendency to phlegmonous inflammation, and it begins with an acute pain in the belly, which is soon followed by a purging, in which the evacuations are less frequent, the pain is much more acute, and attended with hardness, frequency, and fullness of the pulse, and the other symptoms of general inflammation; these continue for some time, and the disease afterwards proceeds as before.

If it takes place as a partial evacuation in fever, it is preceded by the common

mon symptoms of fever, generally those of a violent one, the purging coming on (as already described) on the first, second, or third, and sometimes on any other day, and the patient being exhausted by both diseases, is soon carried off. Sometimes the fever has the appearance of an intermittent, or remittent; the purging being more frequent in the remissions, and either stopping or diminishing in the exacerbations. Sometimes also the fever is relieved, and, if the patient be not exhausted, gradually goes off.

*Diarrhæas* often come on in the *crisis* of fevers, the fever leaving the patient, and the *diarrhæa* stopping in a day or two of itself; and sometimes purgings, without any dysenteric symptoms, happening towards the end of fever, weaken and kill the patient.

Exulcerations have been sometimes found on dissection in the intestines of those who were long afflicted with the disease, but only inflammation in recent cases.

In



## Prevention.

In the autumn after hot or long summers, and in warm climates, care is to be taken to avoid cold in those circumstances in which it is most liable to affect the system; and in camps, the vapour from putrid *fæces*. If there be great danger, the bark may be used, (vide No. 1.)

A moderate use of sour fruits in warm summers, and hot climates, tends also to prevent the disease.

## Cure of the cholera morbus.

In the *cholera morbus*, if the vomiting, purging, and other symptoms be very severe, chicken-broth without salt, decoction of barley, solution of gum arabic, or any other mucilaginous fluid, are to be drank plentifully, to prevent the inflammation from being increased by the efforts, or by the neutral salts in the matter secreted, until the patient be sufficiently reduced to render the exhibition of opium safe. If they be not in so great a degree, a small quantity of emetic tartar (gr.  $\frac{1}{4}$  ad gr. fs.) or some other relaxant, may be given dissolved  
in



in part of the liquor, and repeated in three or four hours : or if the vomiting be not very troublesome, from 20 to 30 grains of rhubarb may be taken with advantage, the patient drinking some of the abovementioned liquors.

When the strength is reduced by the evacuation, and the *primæ viæ* cleared of feculent matter by this treatment, the vomiting and purging are to be stopt by opiates, and (No. 3. 13.) may be used ; but if the patient should be so much weakened by the evacuation, and irritation, before any assistance is called in, as to be in danger of sinking, they are to be exhibited immediately. In both cases the opiate is to be repeated in a smaller dose at six or eight hours intervals, for two or three days, taking care to keep the intestines free from feculent matter by procuring one evacuation every twenty four hours, if it does not take place naturally.

*Diarrhæas*, when not attended by sickness, fever, irritation, or pain, and  
Y
Cure of the  
diarrhœa.
when

Cure of the  
diarrhœa.

when they have not continued long, only require the *primæ viæ* to be cleared by a purgative increasing the peristaltic motion such as

(No. 42.) R Aq. Menth. Vulg. ʒifs  
Aq. Nuc. Mosch. ʒiij  
Pulv. Rhei——ʒj ad ʒfs  
Syr. e. Cort. Aur. ʒij.  
m Ft. Haustus. Capt. ante Merid. vel  
Hora somni.

The patient should use food of easy digestion, and avoid exposure to cold.

If they be attended with any of the above symptoms, or continue above two or three days, they are to be treated in the same manner as dysenteries.

Cure of the  
dysentery.

Evacuation by bleeding is detrimental in dysentery, except when it is the natural cure of a phlegmonous inflammation of the intestines, and attended with hardness, fulness, and strength of the pulse.

The *primæ viæ* are to be cleared both of the feculent matters, and fluids secreted into them; these, as in all other cases



ses of increased secretion where the glands are inflamed, being very apt to stimulate and putrify. Cure of the  
dysentery.

When the stomach is much affected, an emetic is to be exhibited; and it ought to be managed in the same manner as has been directed in fevers, as we wish it here also to exert its relaxing power, and throw the circulation upon the skin.

A purgative is also to be given, and we should chuse those which act principally by increasing the peristaltic motion of the intestines, as it is not a greater secretion which is required, but an evacuation of the matters already contained. Although rhubarb does not purge so copiously, yet as it clears the *primæ viæ* better, it is preferable to most others. We rather chuse therefore to continue to employ it with the older physicians, than give it up as some late practitioners have done, not considering the above intention, nor the progress of the disease after its operation, but merely

Y 2 ly



Cure of the  
dysentery.

ly the copiousness of the evacuation. It may be given as in (No. 42.)

While the disease continues, it is to be repeated frequently for the same purpose, and also to prevent any thing's being retained in the upper part of the intestines, where the peristaltic motion is now going on too slowly.

After the operation of the purgative, we are to endeavour to throw the circulation on the exterior parts of the body by relaxants.

(No. 43.) R Pulv. Ipecac. gr. i ad gr. ij  
vel R Sacchar. Alb. gr. v.

Tartar Emetic. gr.  $\frac{1}{4}$  ad gr. ss  
Ft. Pulv.

Capt. iv<sup>ta</sup> quâque horâ.

The intestines are at the same time to be defended by mucilaginous medicines, and the secretion checked by gentle astringents.

(No.

(No. 44.) R Gum. Arabic. ℥ij      Cure.  
    Solv. in Aq. Hord. ℔ij  
    adde  
    Syr. Limon. — ℥ij  
    Bibat pro potu.

(No. 45.) R Aq. Font. — ℔. ij  
    Corn. Cerv. Calc. et  
    Præp. ℥ij  
    Gum. Arab. — ℥ij  
    Coque, ut Gum. solvatur.  
    Bibat poculum frequenter.

Mucilaginous glisters, as (No. 27.) take off the stimulus arising from attempts to evacuation, when little or nothing is contained in the lower part of the intestines; which stimulus is sometimes the sole cause of the continuance of the disease. When injected every eight or twelve hours, they are now and then sufficient for the cure; and are in all cases useful.

It is also of considerable use to avoid, as much as possible, any attempt to go to stool; and if there be soreness about the anus, it should be rubbed with un-

Cure.

*guent. simplex*, or any other expressed oil that is just fluid in the heat of the body. Or if the other symptoms are greatly diminished, and this continues, an opiate may be added to the mucilage in the glyster.

Stimulants applied externally to the belly, have been found useful in relieving the pain.

(No. 46.) R Spt. Vin. Rectif. ℥ viij  
Ol. Menth. — ℥ ij  
Sapon. Venet. ℥ ss

Solve. Ventri applicentur lintea calida, linimento hocce madefacta, ter quaterve indies.

Vel R Empl. com. ℥ ij  
Ol. S<sup>u</sup>. Carni ℥ ij  
Gum. Galb. ℥ j

Ft. Empl. super alutam extendendum et abdomini applicandum, Interdum additur Extr. Theb. ℥ j.

At the same time the patient should be kept in as pure air as possible, provided



vided that it be always moderately warm, Cure.  
and that he be not exposed at any time  
to cold, especially in those circumstances  
in which it is most liable to affect the  
system.

The food ought to consist of preparations of farinaceous vegetable substances.

If notwithstanding the treatment already proposed, the purging should go on, so that there is danger to be apprehended from the weakness, or irritation; astringents, and particularly opium, may be given along with the other medicines, and from  $\frac{1}{3}$  to half a grain of it, may be taken every eight hours: but when they are employed at the beginning, especially alone, they stop the secretion, but leave the inflammation, and death ensues either from the symptoms of irritation, or now and then from gangrene and mortification of the intestines.

If the disease still continues, and the symptoms of irritation are not very violent,

Cure.

lent, the opium is to be exhibited alone, or spices are to be joined to it ; or other astringents may be employed ; such as,

(No. 47.) R Cort. Semaraubæ ʒfs  
 Coque in Aq. Font. lb. ifs  
 ad lb. i. Colaturæ  
 Capt. lochl. ij. iii<sup>tia</sup>  
 quâque horâ.

Vel R Extract. Lign. Cam-  
 peach. ʒij.  
 Ft. Pill. xx. Capt. iij  
 vel quatuor sextâ  
 quâque horâ.

Or astringents, spices, and opium may be given together.

Or opiates or astringents may be added to the mucilaginous glisters.

But it is to be observed, that it is the secretion we wish to stop by these astringents, and not the evacuation of the matters already contained in the intestines ; for this reason the purgatives ought

ought to be repeated, even during the Cure, -  
use of the astringents.

In recent cases we may expect the cure to succeed quickly ; but in those of longer continuance, a perseverance in the proper remedies is necessary, especially if the intestines should be exulcerated ; and then indeed the disease is frequently fatal.

If a dysentery should arise with acute pain, the evacuations not being frequent, and the pulse hard, full and strong as before described, we are to bleed copiously and repeatedly, and exhibit purgatives which will produce copious evacuations, such as neutral salts, and apply fomentations to the abdomen (No. 33.) till the hardness of the pulse and other symptoms of general and phlegmonous inflammations cease, afterwards we are to proceed as before directed

A dysentery accompanying a fever is also very dangerous, as either disease being cured, the other may continue, and as  
both



Cure.

both together may soon weaken and kill. We are to endeavour to take off the fever, by the remedies already pointed out at the beginning of a violent one, and afterwards to treat the disease as a simple dysentery, being more cautious in employing astringents.

After the purging is stopt, the patient often becomes costive, and if he be suffered to continue in that state for two or three days, he is apt to relapse; the belly is therefore to be opened by bitter purgatives.

After the disease is cured, the bark may be employed to restore the strength. It is also sometimes of use during the purging when it has continued long, and the ordinary symptoms of weakness appear.

The

## The VENEREAL DISEASE.

ALTHOUGH it be not confined to the mucus membrane, yet as the principal symptoms at the beginning depend on inflammation or exulceration of this part of the body, it is to be treated of here.

It is always propagated by an infection, the first appearance of which in *Europe* was in *Spain*; it was afterwards carried to *Naples* in 1494, and from thence it spread almost instantaneously over *France, Germany, Great Britain, &c.* Cause.

The venereal matter must be applied in a fluid state; 1st, either to some part of the body where the mucus is soft, as it is in the parts of generation, (which are generally first infected) or about the nipples, lips, *anus*, &c. or 2dly, to a wound or ulcer; or it may pass from a mother to a child, although commonly in this case, it adheres to the skin, in the passage through the *vagina*.

It

It almost always occasions a conversion of the *mucus* of the part, or of the fluids of the ulcer or wound, into a matter similar to itself; and when a sufficient quantity has been thus produced, it brings on an inflammation in the mucous membrane or glands, or in the wound or ulcer, and it is afterwards sometimes absorbed into the general system of vessels, but very seldom before: the first symptoms therefore appear in the part where the infection was received.

Gonorrhœa.

When it is mixed with the soft *mucus*, it produces

1st, An inflammation, and great secretion from the mucous glands, in which case, it is not often absorbed into the general system; and the disease is called a *gonorrhœa*.

Lues venerea.

Or 2dly, one or more little erysipelatous inflammations, followed by small watery pustules, which break; and ulcers called chancres are formed; after which



which it is commonly absorbed in two or three days, as it generally is, when a wound or ulcer are at first infected; this also happens sometimes in a *gonorrhœa*, and always when a child receives it from its mother; and the distemper is called the *Lues Venerea*.

The *urethra* and *vagina* are for the most part affected with *gonorrhœa*, and the *glans*, *prepuce*, *labia pudendi*, *perinæum*, *anus*, *nipples*, *lips*, &c. with chancres; although either may take place in any of those parts.

Most people are infected by the venereal matter mixing with, and being retained in, the *mucus* of the *urethra* or *vagina*, or upon the *glans*, *prepuce*, or *labia pudendi*, from which it cannot be washed off by the urine, on account of the insolubility of the *mucus* in water, and the symptoms do not appear till after 24 hours, nay sometimes not till after three weeks from the time of receiving the infection, but most commonly they arise in four, five, or six days.

A go-

Gonorrhœa  
from the ure-  
thra in men.

A *gonorrhœa* from the *urethra* in a man begins with an uneasiness about the parts of generation, together with an appearance of a little whitish matter about the orifice of the *urethra*, a little swelling, and sometimes redness there, and a slight pungency upon the evacuation of urine. The whitish matter soon increases in quantity, the inflammation about the end of the *urethra* becomes more evident, and for the most part there is now a tension, and hardness through the whole of it, a swelling of the *lacunæ*, and a sensation of stricture in the *penis*, particularly on erection. The matter still increases, flows out, and grows thinner, loses its adhesiveness, and is of a yellow or greenish colour. There is now always a redness about the end of the canal, often a pain from the distention of the *urethra* during the evacuation of urine, and a much severer one towards the orifice from its *stimulus*, with an increase of the redness, just after it is evacuated. The inflammation prevents the extension of the *urethra*  
in

Chordee.



in erection, so that the *penis* is at that time curved downwards with great pain, which is increased if it be raised towards the belly, and the *stimulus* occasions it often to be erected, especially when warm in bed, and sometimes prevents sleep, or awakens the patient, and now and then produces involuntary emissions of the *semen*.

Sometimes the matter is very thin, Hæmorrhage.  
 or streaked with blood, all the inflammatory symptoms are more violent, and the patient is affected with stranguary. Stranguary.  
 The prepuce also is sometimes inflamed about the end, and cannot be drawn back, which is called a *phymosis*; or being drawn behind the *glans*, Phymosis.  
 cannot be returned, which is called a *paraphymosis*, when the inflammation is Paraphymosis  
 increased by the stricture, and now and then gangrene and mortification are produced; or the whole of it is affected with œdematous swelling, also called *phymosis*. In all these cases ulcers are Oedematous  
phymosis.  
 apt to arise, especially in the two last.

Thus



Natural cure.

Thus the inflammation continues to increase, generally for about a week or two; but it admits of a natural cure, for the *mucus* washes off the venereal matter faster than it is formed, until at last the infection is totally carried off. While this is taking place, the symptoms continue nearly the same for some time; they afterwards begin gradually to decrease, the erections are not so frequent, nor with so much pain, there is not so much inflammation, nor pain from the evacuation of urine, the matter becomes thicker, whiter, and adhesive, gradually diminishes in quantity, becomes irregular often towards the last pieces of *mucus* having a fibrous appearance being mixed with the urine; at last the running ceases, and the inflammatory symptoms at the same time gradually decreasing, leave the patient. Or the infection being carried off, the secretion continues, but in a smaller quantity, thicker, and whiter, and with much less inflammation, for months, or sometimes for years, for the most part going off at last; or not being carried off,

off, the symptoms continue, although commonly with less inflammation than at the beginning. Or exulcerations may be produced, the matter absorbed, and the *lues venerea* brought on, particularly when any fresh cause of inflammation is applied, when the disease continues long, or the infected *mucus* is suffered to remain between the *glans* and prepuce. Or an absorption may sometimes, although seldom, happen without exulceration, and be attended with the same consequence.

A *gonorrhœa* from the *vagina* and *urethra* in women, begins with a heat, itching, and uneasiness, about the parts of generation, followed by a redness about the orifice of the *urethra* extending to the mouth of the *vagina*, a running similar to that already described, with pain for the most part upon the evacuation of urine, and also in sitting when the parts are pressed upon, and in walking, or upon the *vagina's* being distended. It has otherwise the same progress

Gonorrhœa  
in women



and terminations as in men, except that the symptoms are sometimes increased after menstruation. But if the disease affect the *vagina* only, the inflammatory symptoms are often very trifling, or if they make their appearance at the beginning, they go off, so that the patient is hardly sensible of any other inconvenience but the running.

From external parts.

A *gonorrhœa* from any of the external parts, very seldom happens; when it does, (as from the *glans*, for instance) it begins with redness and swelling, the surface is sometimes covered with a whitish crust, similar to *apthæ*, and there is afterwards an ouzing of a matter like that from the *urethra*, the inflammation at first increasing; the infection however is gradually washed off, and the progress and terminations are nearly the same as before described.

From the eyes and nostrils.

*Gonorrhœas* may also arise in the eyes, and nostrils, with symptoms similar to those above-mentioned, except for the part affected.

When



When a *gonorrhœa* continues long, it sometimes produces a stricture in the part, particularly in the *urethra* in men, so as to occasion a difficulty in the evacuation of urine, often attended with great pain, the water flowing out in a small stream, or only by drops; and now and then it also produces a degree of inflammation, and a disposition to contraction in the bladder, and the *urethra* also contracting, the stoppage is increased: this generally goes off with a secretion of *mucus* from these parts, but it may have the other progresses and terminations of an inflammation of the bladder; and often no such affection takes place, or if it does, it goes off, and the stoppage and pain continue for years.

Strictures.

In the urethra  
in men.

A similar stricture takes place in the *urethra* in women, but not near so frequently, and also in the *vagina* preventing its distention; it happens likewise in the end of the prepuce in men, which it prevents from being drawn back after all the other symptoms are gone off.

In the urethra  
in women,  
and vagina,  
and the pre-  
puce.

Phlegmonous  
inflammation

The neighbouring parts, particularly the testicles, glands in the groin, and sometimes the *perinæum*, are also subject to phlegmonous inflammation from slight *stimuli*, such as motion in exercise, pressures, &c.

Inflammation  
in the testi-  
cles.

The testicle inflames with the common symptoms of swelling, pain, heat, hardness, redness, &c. the running for the most part at the same time diminishing or ceasing.

The progress to suppuration, gangrene and mortification, and *scirrhus*, is also the same as in other inflammations of these glands; and it admits of a natural cure, for the running may again increase, the pain, swelling, &c. decrease, and at length, they may leave the patient, the swelling and hardness often continuing for a considerable time.

Buboes with-  
out infection.

The lymphatic glands in the groin likewise sometimes inflame, even when there is no absorption of the matter; but  
this

this case can only be distinguished from those where there is, by the event, which is not to be waited for.

The inflammation of the *perinæum* is attended with the common symptoms of that disease.

Inflammation  
of the peri-  
næum.

The venereal *gonorrhœa* should be distinguished from that in which there is no infection; from the *fluor albus*, and other increased secretions from the different parts subject to this distemper; from involuntary emissions of the *semen*; ulcers in the urinary passages and increased secretions from their mucous *membrane*, from a stone, or any other cause.

Distinctions.

When the *lues venerea* begins with a chancre, there is at first a little erysipelatous inflammation, with itching on the *glans*, prepuce, *labia pudendi*, &c. followed by one or more small pustules, filled with a transparent fluid, becoming sometimes white; these break, and a small, but spreading ulcer is formed, sometimes painful, generally inflamed,

Symptoms of  
the lues ve-  
nerea.

Chancres.



fore, and unequal at the bottom, often with hard, protuberant, ash-coloured edges covered with whitish sloughs, and of difficult cure.

They should be distinguished from little excoriations or ulcers produced, either by rubbing the parts, or by the matter which sometimes is accumulated about them, when they are not kept clean; or by the *fluor albus* on the *labia pudendi* or thighs in women, or on the *glans* and prepuce in men; these, when they arise from coition, appear immediately, and are of easy cure, or go off of themselves in a few days.

Ulcer in the urethra.

If the disease begins with an ulcer in the *urethra*, without *gonorrhœa*, which it very seldom does, there is a foreness, and disposition to the evacuation of urine, with pain on its being evacuated, and an ouzing of a small quantity of a thin, watery fluid; and sometimes a *gonorrhœa* follows.

Vnereal ulcers.

If an ulcer or wound are infected, they inflame, and spread with foreness,  
or

or pain, and inequality of their surface ; they are often covered with whitish floughs, and have ash-coloured edges.

If children receive the infection from their mothers, they now and then are born with symptoms of the disease, as inflammations of the skin, *gonorrhæa*, &c. but for the most part there is no appearance for several days ; in about a week however, eruptions, with brownish scabs degenerating into ulcers, arise about the angles of the mouth, or other parts of the head, or over the whole body.

First symptoms in children.

It is not certainly known, if there be at any time an absorption in a *gonorrhæa* without exulceration ; but sometimes in long-continued ones the infectious matter gets into the system, perhaps from an ulcer in the *urethra*.

Absorption in gonorrhæas.

From the ulcers, wherever they are, the matter is absorbed by the lymphatics, and sometimes as it passes along inflames them, and there is a redness,

Inflammation of the lymphatics.

Z 4                      hardness,



hardness, and foreness in their course to the first lymphatic gland ; often however there is no appearance of this kind.

Bubo.

Whether there be or not, an inflammation of the first glands they pass through, called a *bubo*, is often produced, which, as the parts of generation are most commonly first infected, is generally in the groin ; it begins with foreness to the touch, hardness and swelling of the glands ; these symptoms increase, and are attended with pain, especially on moving, redness of the skin, and the other symptoms common to inflammation. It sometimes terminates quickly in suppuration, sometimes, like other inflammations of glands, it suppurates very slowly, sometimes terminates in scirrhusity, very seldom in gangrene. If it suppurates, when the abscess formed from it breaks, or is opened, the ulcer is generally venereal, I believe always so. The ulcer is sometimes dangerous from its disposition to spread and form sinuses, and from its vicinity to large vessels ; and it is often cured with difficulty.

It



It should be distinguished from other inflammations of these glands brought on by external *stimuli*, as rubbing, &c. or by stimulating fluids, as *pus*, cancerous matter, &c. passing through them; and from an abscess following inflammations of the cellular membrane below the *psoas* muscle, and from ruptures.

Whether a *bubo* arises or not, the matter continues its course through the lymphatics into the blood-vessels.

Symptoms of the matter in the system.

When the venereal matter gets into the system, it generally produces inflammations and ulcers in some part of the body, most commonly in the mucous membrane or skin; but sometimes it may continue for many years, before it has any effect; now and then it never makes its appearance; and for the most part it has been absorbed for some time before any symptoms take place.

If it be secreted in the glands of the mouth or throat, it enflames the membrane

Symptom, of  
the matter in  
the system.

brane and occasions ulcers, attended with the common symptoms of ulceration in those parts, such as hoarseness, pain, and difficulty in swallowing, &c. and similar to the other venereal ones already described; these ulcers spreading, the bones become carious, and openings are made from the mouth to the nose, the palate being destroyed; and the nose, itself sinks, its cartilages and bones also being eat away.

If secreted on the skin, it produces reddish, or purplish spots; or an eruption covered with brownish scabs, often degenerating into venereal ulcers, which, if they happen in the palms of the hands, soles of the feet, or about the *anus*, have often the appearance of fissures in the scarf skin, ouzing out a thin matter with great soreness and pain.

If secreted in the eyes, inflammation and exulceration arise there, with loss of sight; if in the ears, the like inflammatory symptoms are brought on, (although

though feldomer) with deafnefs and *carics* of their bones.

Symptoms of  
matter in the  
fyftem.

Although the parts of generation were not the firft parts infected, the diftemper fometimes appears there and about the *anus*, but not always.

Ulcers of the lungs are now and then the confequence, and pulmonary confumption. Sometimes too there is fwelling of the lymphatics, and other glands.

Or it affects the *periofteum* and bones, and brings on pains in them; efpecially on the body's being heated, and during the natural evening paroxyfm of fever which they render more evident, going off with it in the morning with fwat; the *periofteum* fwells, and becomes hard, with an appearance of fwelling in the bones, and fometimes they do fwell, as others become foft or carious.

Sometimes before the matter gets into the fyftem, or at any other time  
of



Symptoms of  
the matter in  
the system.

of the disease, excrescences arise on the *glans*, prepuce *labia pudendi*, *anus*, &c. either where there have been ulcers, or without any previous exulceration; they are of various figures, are called warts or by other names, and are generally red and soft, sometimes hard and callous, seldom painful.

Various other anomalous symptoms are also brought on by the infection or irritation; but these, if the distemper is not cured, are at least for the most part prevented, from the general knowledge and use of mercury, and are not so often seen now, although the infection has lost none of its virulence, as has been supposed.

There are habits which will bear up against the disease for many years; whilst, in others, the appetite is lost, the pulse rendered more frequent, the evening paroxysm of fever increased and continued through the day time, dropical swellings of the legs, swelling of the *abdomen*, and other symptoms of weakness

weakness and irritation come on, and the patient sinks.

Symptoms of  
the matter in  
the system.

Venereal ulcers, eruptions, pains, &c. should be distinguished from those arising from other causes.

When the infection is communicated by the matter's being mixed with the mucus of the *urethra*, *vagina*, *glans*, prepuce, &c. if no running, ulcer, or pustule have as yet appeared, it may be washed off, and the disease for the most part prevented by

(No. 48.) R Caustic. Com. Fort.

Pharm. Lond. ʒi

Solv. in Aq. Font lb. j

et cola per Chartam.

Some of the above solution is to be mixed, by a little at a time, with a cup full of water, till it be strong enough to wash the *mucus* from the mouth without giving much pain. Fill a syringe with this liquor, and inject it into the *urethra*, or *vagina*, retaining it there for about a minute; then add to the  
remainder

remainder of the liquor a tea spoonful of the solution, and wash the *glans*, prepuce, *labia pudendi*, &c. lastly inject, and wash with a little pure water, milk-warm.

Cure of the  
gonorrhœa.

The *Gonorrhœa* may be cured,

1st, By assisting the natural cure.

2dly, by injections.

3dly, By mercury alone. Or the success of the two first methods may be ensured by it.

The natural cure is assisted.

1st, By diminishing the inflammation by bleeding, if the patient be strong or plethoric, the pulse full and hard, and the chordee frequent and painful; from  $\frac{3}{4}$  xij to xx of blood may be taken away, but the operation seldom requires to be repeated, and the frequency and pain of erection are the only symptoms we can hope to relieve by it, and that  
too



too in the cases now described, for in others (the inflammation being kept up by the *stimulus* of the matter and the urine) it has no effect, or it is detrimental, especially if the habit be irritable.

Cure of the  
gonorrhœa.

2dly, By drinking plentifully of mucilaginous watery fluids acidulated (as No. 32. without the Sem. Petrosel.) to dilute the urine, and prevent its neutral salts from stimulating and increasing the inflammation.

3dly, By the application of emollient fomentations, and poultices.

4thly, By injecting oily or mucilaginous fluids into the *urethra* or *vagina*, and by rubbing them on the *glans*, prepuce, *labia pudendi*, &c. as

(No. 49.) R Sev. Ovil. Curat. ℥i

Ol Olivar. — ℥ii m

Liquefiant leni calore, tempore utendi.

5thly, By increasing the secretion a little by such gentle purgatives, as procure only two or three evacuations a day.

Severe

Cure of the  
gonorrhœa.

Severe purging often augments the inflammatory symptoms, brings on stranguery and exulcerations, gives occasion to inflammation of the testicles, and other neighbouring parts ; or it stops the running before the infection is washed off, and the *gonorrhœa* either returns in a few days, or exulcerations take place. Long-continued purging is apt to weaken the stomach and intestines, to hurt the digestion, to produce obstinate gleans and leave hypochondriacal symptoms, particularly in irritable or melancholic habits.

6thly, By avoiding exercise, salt, spices, and too much animal food, especially at the beginning, when there is a great deal of inflammation.

If with the above treatment the inflammatory symptoms diminish, the running becomes thicker, and, at the end of four or five weeks, leaves the patient ; there is then no reason to suspect the system to be infected.

If

If any of the preparations of mercury described below, be used with the above remedies, their effects are rendered more certain.

Cure of the  
gonorrhœa.

2dly, The substances to be used in the cure by injections are,

(No. 50.) (a) R Aq. Font. ℥ viij  
Gum. Arab. ℥vj  
Calomel 6<sup>ties</sup> sublimati  
(Mercurii crudi ℥i  
singulis libris singulis  
Vicibus additâ) et in  
pulverem tenuissimum  
triti ℥ ss m.

(b) R Aq. Rosar. ℥i  
Merc. Subl. corros.  
gr. j. solve.

R Solution. præscript.  
g<sup>tt</sup> xxx ad LX  
Aq. Rosar. ℥i. m,



Cure,

If this injection be employed, we are to begin with it weak, and gradually to increase its strength, so that the patient suffers but little pain after it is evacuated: a piece of soft linen rag is to be kept between the *glans* and prepuce during its use.

(c) R Aq. Rosar. ℥ij  
 Sacchar. Saturn. gr. v ad x  
 solve.

(d) R Ol. Olivar. ℥ij  
 Mercurii. saliva vel Mucilage  
 Gum. Arab. extinct.  
 3 ad ℥iij. m.

Preparations of copper, zinc, and vegetable astringents, have also been employed by some people.

A little of one of these injections is to be thrown into the *urethra* or *vagina* at first four times, afterwards three times, and at last once in 24 hours, and kept there for about a minute.

The

The sooner they are used the better. Cure.

No previous treatment is required except bleeding: (vide the first method in the natural cure.)

We should always exhibit mercury at the same time, in the manner recommended in the *lues venerea*.

If a sense of stricture towards the bulbous part of the *urethra* should be felt, or if the running should not stop in a fortnight, notwithstanding the use of the injection, it should be left off; but the mercury should be continued, the inflammatory symptoms being kept off by the bark: if the *gonorrhœa* does not stop in a fortnight more, recourse must be had to the injection. The mercury is to be exhibited for a week or two longer, if the symptoms do not go off in that time. Bark may also be given at the beginning, to the quantity of an ounce in 24 hours for a day or two, and afterwards to  $\mathfrak{z}\text{ij}$ ; having first bled the

A a 2

patient,

Cure.

patient, if his habit be plethoric, or his pulse hard. Should the disease be carried off by the injection in a few days, it is nevertheless safer to persist in the use of the mercury for a month; but it is not always absolutely necessary.

Omitting the injection once or twice will often make it fail of curing, when it would have otherwise produced that effect.

The 1st, 2d, and 4th remedies recommended in the natural method, are to be used in this.

This method for the most part cures sooner, with much less pain, and with as great safety, provided mercury be used, as the former; and patients treated in this manner are less liable to inflammation of the testicles, or of the glands of the groin, or to chancres or strictures.

3dly,



3dly, The cure by mercury is performed.

1st, By bleeding, if the patient be plethoric.

2dly, By the 1st, 2d, 3d, 4th and 6th remedies, recommended in the natural method of cure.

3dly, If at the beginning, the inflammation be troublesome, an ounce of bark is to be given every 24 hours till it abates, and afterwards 3 drachms.

4thly, Mercury is to be employed internally, as in the *lues venerea*.

When there is any ulcer, or any symptom of the matter's having been absorbed, the patient cannot be cured with safety and certainty, unless mercury be exhibited.

Cure of the  
*lues venerea*.

The preparations of mercury to be used are,

Cure.

(No. 51.) R Terebinth. Venet. ʒij

Mercur. Crud. ʒj

Terantur simul, quamdiu Guttula  
vel minima appareat, dein adde  
Unguent. simpl. ʒxiv.

Turpentine is here prescribed, because we are more certain of extinguishing the mercury with it, than with any other substance (excepting balsam of sulphur, which is fœtid) although it is sometimes apt to produce little pimples on the skin, which are however of no material consequence.

From one drachm to three of this ointment is to be rubbed thoroughly into the thighs, arms, or legs, every other night, beginning, if a salivation is not intended, with ʒjss the first time; and, if the mouth is not at all affected, increasing it to ʒj ʒij the second; and gradually afterwards by gr. x at a time, as long as the mouth will bear it. If it be intended, we begin with ʒij every other

other night, and increase or diminish <sup>Cure.</sup> the dose, so that the patient shall spit from ℥.ij to ℥.iv every 24 hours.

(No. 52.) (a) R Mercur crud. ʒj  
                   Terebinth Venet. ʒjss  
 Terantur simul, quamdiu guttula Mer-  
 curii appareat, addendo Guttas ali-  
 quot Olei Terebinthini, si opus sit.  
 Dein cum q. s. Pulv. Glycer. Fiant  
 Pillulæ LXXX. Capt. j vel ij mane  
 et vespere.

(b) R Merc. calcinat. gr. j ad iij  
           Extract. Gentian. q. s.  
 Ft. Pilula. Capt. Vesp.

If either of the above preparations should purge the patient,

(No. 53.) R Opii gr.  $\frac{1}{3}$  ad gr. j  
           Tart. emet. gr.  $\frac{1}{3}$  ad gr. ss.  
 m Ft. Pilula Capt. mane et vespere.

The compounds of mercury and acids are much more uncertain remedies than the above, and ought never to be used,



Cure.

unless the patient be in a situation where he runs the greatest risque of catching cold. When they are given it may be in the following form.

R Spt. Vin. dilut. (Angl. *Proof*  
dicti) ʒ ss.

Merc. Sub. Corros. gr. ss. ad  
gr. j

solve. Capt. mane et vespere.

Whatever preparation we employ, we should give it in such a manner, and in such a dose, as to produce hardness, fullness, and moderate frequency of the pulse, with as little sensible evacuation as possible; for the mercury cures sooner, and with greater certainty, when the strength is but little, than when it is much reduced by it. Therefore, unless the case be very urgent, we are to begin with small doses at first, and afterwards gradually to increase them; giving opium and antimony, and now and then a small dose of rhubarb, if the intestines are affected: and omitting the medicine for two or three days, if there  
be

be symptoms of salivation, till these be gone off. Cure.

The symptoms of approaching salivation, are a disagreeable taste in the mouth, and soreness of the gums, or salivary glands.

The ointment should always be employed in bad cases ; but in slighter ones, in *gonorrhœas*, and where there is great risque of catching cold, the mercury may be used internally.

It is never necessary to salivate a patient, unless he be so irritable, that the smallest dose of mercury immediately affects his mouth ; or unless the disease be proceeding so fast, that it would be hazardous to wait till it was checked by the remedy given in such a manner as to avoid salivation ; or excepting when we cannot trust to his using it regularly. On the contrary, salivation rather renders the effect of the medicine uncertain.

The

Cure.

The precautions necessary to avoid salivation, are, 1st, Exhibiting the mercury as has just been described: 2dly, Taking care not to stimulate the salivary glands, either by rubbing the skin over them, and keeping it too warm with flannel, or by any stimulus in the mouth: 3dly, Avoiding sudden exposure to cold. It is to be observed, that the patient is rendered irritable by the use of the mercury. Hence cold applied in the circumstances in which it is apt to produce diseases, (vide the *Catarrh*,) brings on salivation, dysentery, or rheumatism; and the *stimulus* of the mercury being directed to the salivary glands, or intestines, produces in them greater inflammation, than that which takes place in a salivation from mercury alone, or in a dysentery from cold alone. It is by no means necessary however to confine him to a close, warm room, except in a salivation; it is sufficient if he wear flannel or cotton next his skin, and carefully avoid a moist atmosphere,  
or



or rain, and the evening air: on the contrary, the air of a close room often, nay sometimes that of a large town, prevents the healing of venereal ulcers, or even the destruction of the infectious matter by the mercury, and the patient cannot be cured, unless he be removed into a freer air, or into the country. Cure.

If notwithstanding these precautions, a salivation should come on, we know of no remedy which will remove it with any degree of certainty, although sulphur, camphire, and purgatives, have been recommended for this purpose. If therefore the case be urgent, the best way is to let it go on, using the mercurial ointment as before described: and we should confine the patient to a room where there are no streams of air, but which, at the same time, is not too warm: he should be clothed with flannel, and no food ought to be given him but what is of easy digestion and good nourishment. If the symptoms are increasing slowly, the mercury should be omitted

Cure.

omitted till the salivation goes off, and afterwards recurred to.

The mercury, whether we salivate or not, should be continued four or five weeks, even if the symptoms should leave the patient before that time.

It should be continued till all the symptoms are gone off, except

1st, When a *gonorrhœa* remains with little inflammation. (Vide the *Gonorrhœa Benigna*.)

2dly, When the patient is much reduced by it, and there are ulcers which do not put on the appearance of healing. In this case, it is to be left off, and the patient strengthened, and the common means of curing ulcers not venereal, are to be employed; if these do not succeed, he is to return to the use of the mercury.

3dly, When ulcers covered with fœtid sloughs appear, and spread exceedingly

ingly fast; in this case bark, and the Cure.  
other remedies for gangrene and mortification, are to be made use of.

4thly, When only rheumatic pains remain, these often arising from the mercury itself, are to be cured by preparations of antimony, and sarsaparilla.

If by the imprudent use of mercury, or exposure to cold, a salivation with great inflammation of the salivary glands and mouth is brought on, it is to be omitted, and the common antiphlogistic remedies used, till these symptoms are carried off. If dysentery should be brought on, we are to take away from  $\text{℥ xij}$  to  $\text{℥ xvj}$  of blood, afterwards to give a dose of rhubarb; lastly, to stop the purging by (No. 53.) leaving off the mercury for a day or two.

If rheumatism is produced, it is to be treated in the manner directed in that disease.

If



Cure.

If the mercury should occasion general inflammation to a degree which may be dangerous, from  $\text{℥ xij}$  to  $\text{℥ xvj}$  of blood are to be taken away.

If there be venereal ulcers of any kind, bark may be given with advantage along with the mercury, to the quantity of  $\text{℥ ss}$  every 24 hours; but we are to bleed first, if the patient be of an inflammatory habit, or plethoric. The same medicine may also be used in all cases where the patient's strength is in danger of being too much reduced by the mercury.

If there be eruptions, or pains in the bones, decoctions of woods containing resinous substances, and relaxants, are of considerable use.

(No. 53.) R Rasur. Lig Guaiac.  $\text{℥ iij}$   
 Coque in Aq. Font.  $\text{℔ iv}$   
 ad  $\text{℔ . ij}$ .  
 Colaturæ adde Tart. Emet.  
 $\text{g.}^{\frac{2}{3}}$  ad gr.  $\text{i ss}$ . Divid.  
 in

in partes iij. Capt. unam  
mane, alteram post pran-  
sum, tertiam H. S. quo-  
tidie.

Guaiacum, sarsaparilla, and some other remedies, have sometimes cured the disease without mercury, particularly in warm climates, but they are never to be trusted to alone.

If the patient be not salivated by the mercury, he may use such animal food as is of easy digestion, but he is to avoid salt, spices, and wine.

If there be an œdematous *phymosis*, from  $\mathfrak{z}\mathfrak{j}$  to  $\mathfrak{z}\mathfrak{i}\mathfrak{s}$  of bark is to be given every 24 hours until the inflammation abate, and afterwards  $\mathfrak{z}\mathfrak{i}\mathfrak{s}$  : mercury likewise is always to be exhibited in this case. *Phymosis* from stricture alone, frequently goes off with the other symptoms. In every kind of *phymosis*, milk and water is to be injected between the *glans* and the prepuce, three or four times

Treatment  
of particular  
symptoms.

Treatment  
of particular  
symptoms.

times a day ; and, if a very painful ulcer should be formed there, and should not give way to bark and mercury, the prepuce should be slit open, or if that be not sufficient, entirely cut off.

In the *paraphymosis* the prepuce should be cut, emollient fomentations and poultices applied, and the other antiphlogistic remedies employed ; and mercury is always to be exhibited.

Inflammation of the testicle is to be treated as any other external phlegmonous inflammation ; the testicle is to be suspended by proper bandages ; fomentations and poultices (No. 33.) are to be applied. Purgatives, as evacuants, are useful, if they re-produce the *gonorrhœa* ; and strong vomits, where the constitution will bear them, sometimes carry off the inflammatory symptoms immediately.

(No.



(No. 54.) R Turpeth. Mineral gr. iij  
ad v.

Treatment  
of particular  
symptoms.

Pulv. Glycyrr. gr. xx m  
Vel Tart. Emet. gr. iij ad v

Pulv. Ipec. gr. viij.

Ft. Pulv. Emet, Capt. Vespere,  
Superbibend. Aq. Calid.

When the inflammatory symptoms are gone off, mercury should always be used, and, if a hardness remain, the poultices are to be continued, and the skin of the *scrotum* rubbed with volatile liniment two or three times a day; and no other means are to be used to stop the running.

If a stricture should remain in the *urethra*, and produce inflammatory symptoms, these are first to be taken off by the common antiphlogistic remedies; after they are taken off, or where they are not present, the stricture is to be removed by *bougies*; and if the infection has not been destroyed, mercury is to be used. If after all the other symp-

B b

toms

Treatment  
of particular  
symptoms.

toms are gone off, the end of the prepuce remains for several weeks so contracted as to prevent coition, it is to be cut open.

If recent chancres be the symptoms of the *lues venerea*, they may often be cured by cutting off the surface, or destroying it by caustics; but the mercury should nevertheless be continued for a month. The same external applications are to be used to venereal ulcers, as to others of difficult cure.

A *bubo*, if it be just beginning, may sometimes be prevented from suppurating: 1st, By bleeding when the habit is phlethoric or inflammatory. 2dly, By immediately rubbing as much mercurial ointment on the patient's thighs as he can bear without salivation. 3dly, By the application of fomentations and poultices (No. 33.) 4thly, By the application of mercurial plaisters. 5thly, By *saccharum saturni* according to some practitioners; but I am always afraid  
of



of any salt of lead when it lies long upon a part.

If a *bubo* does not suppurate, and be not totally dispersed, some of the venereal matter may remain in the gland, till some *stimulus* occasion its absorption, when the disease may be propagated over the whole system. This happens however very rarely, and the matter may remain in the part for years together before it makes its appearance.

If the *bubo* be already large, with a good deal of inflammation, it is better to promote its suppuration by the application of poultices of bread and milk; and some practitioners supposing that it prevents the matter's passing into the system, have judged it preferable to do this always; but I think, as the infection is now to be destroyed by mercury, that it is more eligible to prevent a patient from suffering unnecessary pain. When the suppuration is compleated, the skin covering the abscess is to be altogether taken off, either by the knife

or

*13. Buboes arise from matter passing into the system not from being changed from it. The amount of venereal matter is increased not by their being brought to suppuration.*



Treatment  
of particular  
symptoms.

or caustic, and the ulcer is to be treated as other venereal ones.

If there be excrescences any where, the infection is first to be got rid of by a long course of mercury ; towards the end of which, they are to be cut off, and the part below destroyed by caustics, as far as it is of the texture of the excrescence ; and when the floughs have separated, the ulcer is to be treated as a common one.

Eruptions, and pains in the bones, which cannot be cured by mercury, antimony, sarsaparilla, or guaiacum, sometimes give way to the warm bath.

## T H E

## GONORRHOEA BENIGNA, OR GLEET.

**I**T is an increased secretion from the mucous glands of the *urethra* without infection.

It may remain after the venereal matter has been destroyed or washed off in a venereal *gonorrhæa*; or it may arise from general weakness, severe purging, exercise, frequent coition, cold, and intoxication with wine, and especially in those who have had long and frequent *gonorrhæas*.

When it remains after the infection has been carried off in a venereal *gonorrhæa*, the running is commonly thicker, whiter, often adhesive, and incapable of communicating the infection; the inflammatory symptoms are greatly diminished, but they do not go off entirely. When it takes place from any other cause, it begins with a running nearly similar to that in a venereal *gonorrhæa*,

*gonorrhœa*, but generally less in quantity, and is not attended with so much inflammation, and is never infectious. In both cases the inflammatory symptoms may, by exposure to any of the causes, be increased to as great a degree as when there is infection; but they go off of themselves in a few days, and sometimes the running with them.

The running sometimes ceases of itself, in a week or two; sometimes it continues for years without any detriment to the patient, and now and then we meet with a case where it weakens him, brings on involuntary emissions of the semen, and at last kills.

If it arose from a venereal *gonorrhœa*, and mercury has not been used at all, or not in a sufficient quantity, or if there be a suspicion of infection, it is best to begin by ensuring the destruction of the venereal matter, by a mercurial course.



It is to be stopped in weak habits by the internal use of strengthening and astringent remedies.

(No. 55.) R Cort. Peruv. ʒij  
Nuc. Gall. ʒij  
Caryoph. Arom. ʒfs  
Infunde in Vin. rubr.  
Lusit. lb j. per Horas  
xlviii. Cola. dein In-  
fund. in Aq. Font.  
lb. j per Horam, et  
cola. Colaturas misce,  
et capt. Æger. Coch.  
iv ter quaterve indies.

The other methods of strengthening the system may also be used ; but it is to be observed, that the cold bath sometimes increases the running.

Resinous astringents, as *balsamum copaibæ*, exhibited three or four times a day, sometimes succeed ; but care should be taken to avoid exciting general inflammation.

flammation by them in inflammatory habits.

The injections recommended in the venereal *gonorrhœa* continued for two or three weeks, sometimes put a stop to the disease.

Or mercurial ointment may be rubbed externally along the course of the *urethra* two or three times a day.

By one or other of these methods we can for the most part cure this distemper ; but it will continue sometimes notwithstanding our best endeavours, and perhaps go off of itself at last.

F I N I S.







